American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 17, No. 10
OCTOBER 1993

SUMMARY

Although the low-sulfur diesel market got off to a bumpy start in some locations due to flood-related pipeline problems in the Midwest and a combination of refinery and other problems in California, October's deliveries of the EPA-mandated fuel, at over 1.8 million B/D, exceeded estimates of underlying consumption.

At refineries, October's distillate output jumped 7.0 percent to nearly 3.5 million B/D—its highest monthly level in more than 15 years. Output of low-sulfur diesel surged to 1.9 million B/D during the latter half of the month and averaged nearly 1.8 million B/D for October as a whole. Most of that went to market, while high-sulfur distillate went to build stocks for the heating season. By month-end, the situation was clearly improving and prices for low-sulfur diesel were dropping.

Meanwhile, total petroleum deliveries dropped 2.0 percent for October, their first significant year-to-year decline since May. However, the drop was mainly the result of substantial declines for residual fuel oil and "other oils". Deliveries of major light products continued to show growth roughly consistent with or stronger than recent prior patterns.

Gasoline deliveries rose 1.8 percent, marginally ahead of estimated consumption growth, and distillate deliveries jumped 4.7 percent despite weather warmer than last year in major heating-oil-consuming regions. Kerosine jet fuel deliveries rose 1.7 percent, reflecting both a continued rise in air traffic and the military switch to kerosine-based jet fuel. Residual fuel oil deliveries, on the other hand, fell nearly 300 thousand B/D or 25 percent, and deliveries of "other oils", 175 thousand B/D or 3.8 percent.

Despite the boost to Alaskan production from partial completion of the gas-handling project on the North Slope and the coming onstream of the Point McIntyre field, Alaskan production still fell 77 thousand B/D or 4.5 percent for October. For the U.S. as a whole, crude oil production still fell in October by 3.4 percent, or 241 thousand B/D versus one year earlier.

Imports rose 3.8 percent versus last October, with both crude and products showing year-to-year increases. Total inventories rose 12 million barrels, including an 11 million barrel rise in distillate stocks.

PRODUCT SUPPLIED

Gasoline

OXYGENATED RISES TO 24 PERCENT OF DELIVERIES.

For October, gasoline deliveries rose 1.8 percent, slightly ahead of estimated consumption growth of around 1 percent or so. Oxygenated gasoline had already accounted for a little less than 15 percent of deliveries in September as the distribution system was being readied for the beginning of the oxygenate season. With oxygenate requirements beginning in October for roughly a third of the EPA-designated carbon monoxide non-attainment areas, oxygenated gasoline's share of total gasoline deliveries rose to 24 percent.

Meanwhile, highway travel has been showing steady growth, even edging up slightly. Second quarter growth in travel had averaged 2.7 percent versus the prior year, while July and August increases, the latest available, inched up to roughly 3.0 percent. This rate has likely continued in more recent months.

October also marked the increase in Federal gasoline taxes by 4.3 cents per gallon. With the addition of the most recent tax, approximately one third, or a little over 40 cents, of the average retail gasoline price goes to excise taxes—18.4 cents for the Federal excise tax, and a national average of 22 cents for state and local taxes.

Distillates

DELIVERIES OF LOW-SULFUR EXCEED 1.8 MILLION B/D.

The low-sulfur diesel market got off to an uneven start in some regions in October, though the situation was clearly improving by month-end. Beginning October 1, diesel for on-highway use—nearly half the market for distillate fuel oil—was required by EPA to contain no more than .05 percent sulfur, or roughly a fifth of average prior levels. California regulations also added tighter specifications for aromatics.

	API ESTIMATES			
	OCTOBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.2	(2.0)	17.0	0.2
Crude production	6.9	(3.4)	6.8	(4.8)
Total imports	8.8	3.8	8.4	6.8
Stocks (million bbl)	1,091	2.2	na	na

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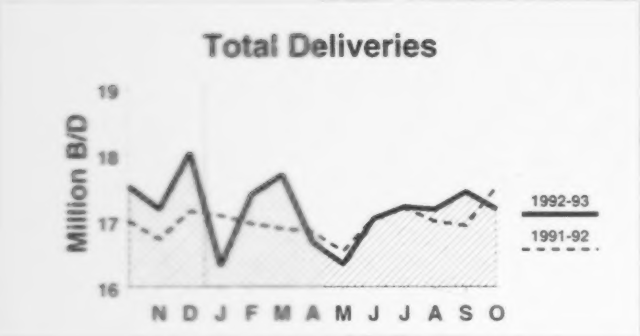
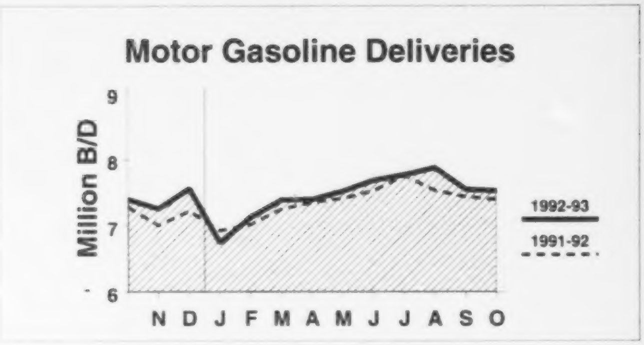
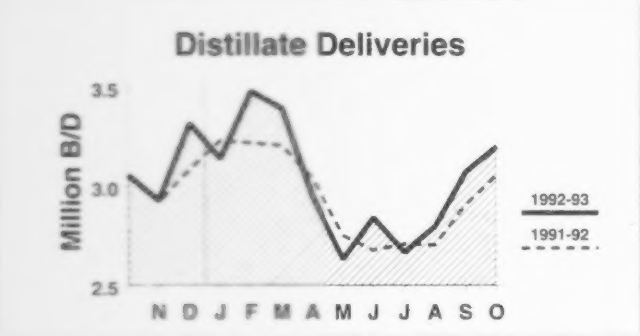
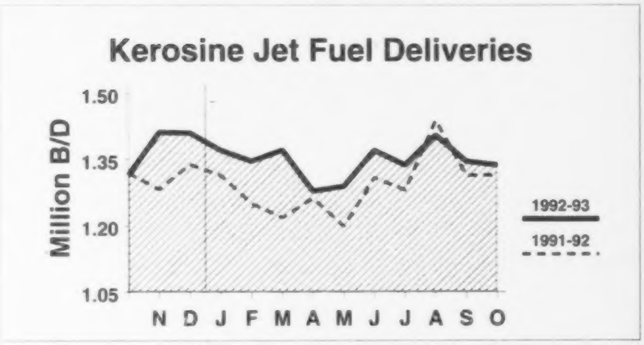

Total Deliveries


Motor Gasoline Deliveries


Distillate Deliveries


Kerosine Jet Fuel Deliveries

Although production of low-sulfur diesel at refineries had been rising steadily over the past several months in anticipation of the October 1 deadline, and primary-level stocks of low-sulfur product had reached nearly 45 percent of total distillates by the beginning of the month, flood-related pipeline problems in the Midwest and a combination of refinery and other problems in California resulted in some supply imbalances. National average retail prices, including the 4.3 cent per gallon increase in Federal excise taxes, were bid up roughly 15 cents from early September to mid-October, and in the Midwest and California by at least 20 to 25 cents for the same period. The EPA, in recognizing the transitional problems, temporarily granted enforcement discretion for users who could show that they had made an effort to locate low-sulfur product. California also loosened its requirements by temporarily limiting its mandate to on-highway uses.

With refineries cranking out low-sulfur distillate at nearly 2 million B/D during the second half of the month, the situation by month-end appeared to be improving and prices were beginning to fall. For the month as a whole, over 1.8 million B/D of low-sulfur distillate was supplied, well above estimated annual consumption of 1.4-1.6 million B/D, and amounted to 57 percent of all distillate deliveries.

As for the off-highway sector, warmer weather in the Northeast compared with last October dampened consumption by an estimated 50 thousand B/D versus a year ago. Even so, total distillate deliveries were up 4.7 percent from last October, likely pushed up by the surge in low-sulfur deliveries.

Kerosine Jet Fuel

1.7 PERCENT RISE PUTS DELIVERIES NEAR RECORD.

Growth in both the passenger and air cargo segments of the commercial aviation sector resulted in October's jet fuel deliveries increasing by 22 thousand B/D, or 1.7 percent year to year. At 1.337 million B/D, this October's delivery level had been exceeded only once, in October 1990 when Operation Desert Shield's military airlift pushed deliveries up over 1.4 million B/D. For the year-to-date, deliveries have increased by 4.3 percent.

Given that October falls between the summer and holiday vacation seasons, it has traditionally been one of the slowest months of the year for air travel. Based on preliminary estimates for total air-miles flown, it appears that air travel was relatively strong for the early fall. For the month, total air-miles flown increased just over 1 percent compared to the same period last year. In addition, the air cargo sector also indicated continued growth. Through September, the most recent month available, air cargo miles increased nearly 4 percent. For air freight, which accounts for nearly 85 percent of total cargo ton-miles, growth during the first nine months of the year was up 3.5 percent compared to last year.

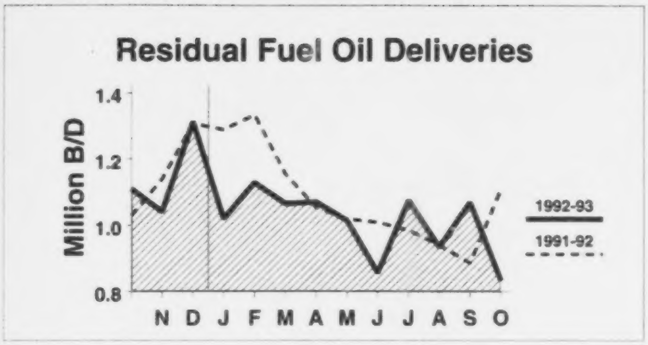
Although final figures are not yet available from the Defense Fuel Supply Center, it appears that military liftings of jet-kerosine have also contributed to the increase in deliveries. Military liftings of jet-kerosine averaged approximately 85 thousand B/D during the month, an increase of roughly 40 percent over a year ago. Most of this increase reflects the change from jet-naphtha to jet-kerosine for West Coast bases that went into effect October 1.

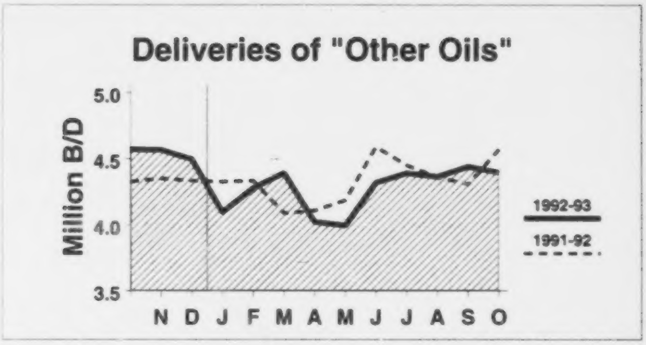
Residual Fuel Oil

OCTOBER REVERSES SEPTEMBER'S RISE.

In contrast to September's strong increase, deliveries of residual fuel oil declined sharply during October. At 833 thousand B/D, October deliveries were off 25 percent compared to the same period a year ago. This resulted in accelerating the year-to-date decline to approximately 7 percent.

Since October falls between the cooling and heating seasons, it has traditionally been one of the year's weakest months for resid





deliveries. Moderate temperatures in regions with heavy resid use combined with already-high end-user stocks curbed any growth in deliveries. In the Northeast, this October proved to be only moderately warmer than last, resulting in electricity generation levels being approximately the same as a year ago. In Florida, temperatures remained warm and thus increased October's number of cooling degree days by 20 percent year-to-year and electricity generation by 4-5 percent.

Although residual fuel prices had maintained a price advantage over natural gas during the past several months, prices for both products fell during October. This probably encouraged resid users to postpone incremental purchases in the event prices would fall further. With respect to resid, the spot price of resid containing less than 1 percent sulfur by weight averaged $15 per barrel during October, or approximately $2.40 per million BTU. Grades containing more than 1 percent sulfur by weight ranged from just over $10 per barrel to about $14.50 per barrel, or $1.66 to $2.30 per million BTU during the same period. These prices reflected declines between this October and last of 20 percent for low sulfur grades and between 18 to 27 percent for grades with higher sulfur content. With respect to natural gas, the October average near-term natural gas price of $2.21 per million BTU represented a decline of 7.4 percent from a year ago.

Other Oils

DOWN 3.8 PERCENT FOR THE MONTH. Reversing September's unusual year-to-year increase, deliveries of "other oils" resumed the pattern of declines that has been the norm so far this year. October's deliveries drop amounted to 3.8 percent, or about 175 thousand B/D. In recent months, only deliveries of ethane, a major petrochemical feedstock, and asphalt have shown any positive year-to-year growth. Deliveries of most other components of the "other oils" category have continued to show year-to-year declines.

SUPPLY

Production

ALASKA'S DECLINE SLOWED BUT NOT REVERSED. Despite the boost to Alaskan production from partial completion of the gas-handling project on the North Slope, U.S. crude oil production still fell in October by 3.4 percent, or 241 thousand B/D, versus one year earlier. Lower 48 production fell 3 percent, or 164 thousand B/D, compared with last October.

In Alaska, the GHX-2 project, to be completed next year, is currently capable of adding about 50 thousand B/D to Prudhoe Bay production at the stage finished in September. The Point McIntyre field also began production in the middle of October, at rate of about 80 thousand B/D, adding 40-50 thousand B/D to the month's average. Alaskan production as a whole was boosted to more than 1.6 million B/D, its highest level since March, but on a year to year basis, it still fell 4.5 percent or 77 thousand B/D. Although continued development in Alaska has slowed the decline in output there, it has not halted it by any means. Compared with peak Alaskan production of nearly 2.1 million B/D in early 1988, October's output was still down 22 percent or nearly half a million B/D.

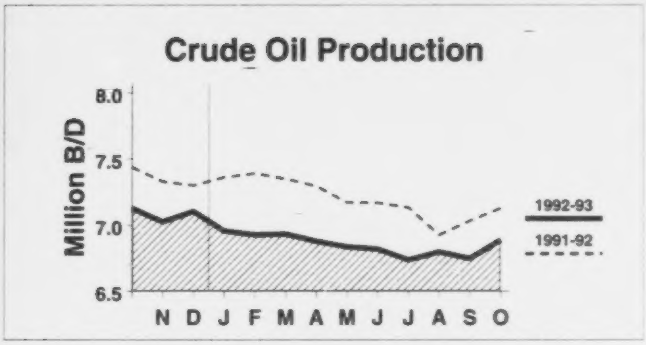
Imports

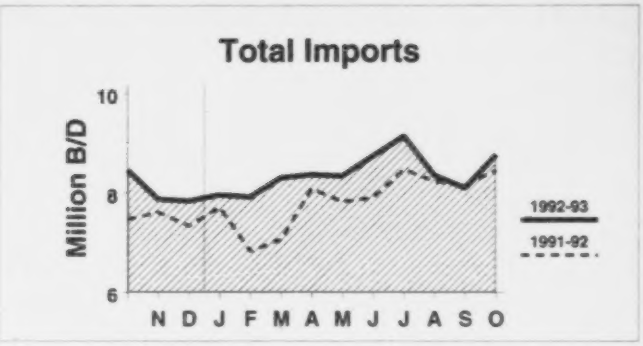
INCREASES FOR BOTH CRUDE AND PRODUCTS. After two consecutive months of decline, October imports of refined products reversed that trend and increased by 37 thousand B/D, or 2.0 percent. This turnaround was the result of a 52 thousand B/D, 27 percent increase in motor gasoline imports that offset declines in imports of other refined products. The net increase in refined product imports combined with the 280 thousand B/D increase in crude oil imports resulted in a 3.8 percent year-to-year increase for all petroleum imports. For the year-to-date, total petroleum imports increased by 6.8 percent. However, because some of this year's imports went into greater stock building this year than last, the underlying growth in the need for imports we estimate to have been closer to 4-5 percent, or about 350 thousand B/D.

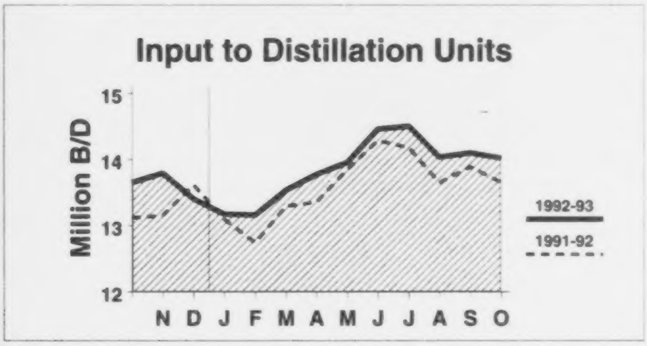
Aside from imports of motor gasoline, imports of all the other major refined products posted declines between this October and last. Kerosine jet fuel had a modest year-to-year decline of 2.4 percent compared to the declines in residual fuel oil and distillates. Imports of resid fell 22.3 percent year-to-year, or by 84 thousand B/D. This month's distillate imports, of which over half is now of the low-sulfur grade, declined 38 thousand B/D, or 14.4 percent, from a year ago.

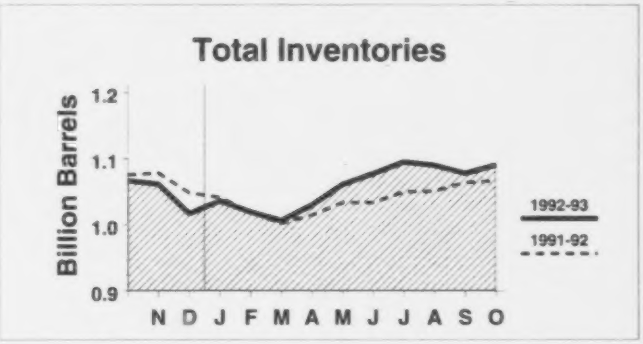
Refinery Operations

LOW-SULFUR OUTPUT REACHES NEARLY 1.8 MILLION B/D. October's input to distillation units rose 2.7 percent from a year ago, and utilization averaged a strong 92.6 percent. Distillate production was up a robust 7.0 percent, to nearly 3.5 million B/D—its highest monthly level in more than 15 years. Output of low-sulfur distillate surged to 1.9 million B/D during the latter half of October and, for the month as a whole, averaged 1.8 million B/D. The share of output of low-sulfur distillate rose to over 51 percent from 45 percent in September.


Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

Gasoline output rose 1.9 percent from last October to 7.4 million B/D. Including blending outside refineries, an estimated 28 percent of finished gasoline produced was oxygenated.

Kerosine jet fuel output, reflecting the small growth in deliveries, was down slightly, and residual fuel output fell 5.3 percent.

Inventories

CRUDE AND PRODUCTS INCREASE FROM SEPTEMBER'S LEVELS.

Total inventories, which have often fallen during October in recent years, rose 12 million barrels to 1,091 million barrels compared with end-of-September levels. Most of the increase was in product stocks, particularly distillate fuel oil. However, crude stocks rose as well, by 3 million barrels to 332 million barrels, reversing two months of decline.

Distillate stocks' strong rise of 11 million barrels brought stocks to 138 million barrels. This was at the top end of the range of recent experience, no doubt reflecting in part the more complex logistics of supplying two grades of distillate where previously there had usually been only one. In recent prior years, distillate inventories have ranged from 122 to 138 million barrels at the end of October. With most of the surge in low-sulfur refinery output going to market rather than inventory, the stock build was mainly in high-sulfur distillate.

Gasoline stocks rose 2 million barrels to 210 million barrels over the month. Of the 173 million barrels of finished gasoline, oxygenated accounted for 16 percent of the total, up from 11 percent in September. However, these figures do not reflect all available supplies, since they do not include stocks of unblended MTBE or ethanol.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	October 1993[2]	October 1992[3]	October % Change	YEAR-TO-DATE 1993[4]	YEAR-TO-DATE 1992[3]	YEAR-TO-DATE % Change
Disposition:						
Total motor gasoline	7,533	7,401	1.8	7,463	7,368	1.3
Finished oxygenated	1,792	na	na	957	na	na
Finished reformulated	0	na	na	0	na	na
Finished other	5,741	na	na	6,506	na	na
Naphtha-jet	80	165	(51.5)	116	147	(21.1)
Kerosine-jet	1,337	1,315	1.7	1,345	1,290	4.3
Distillate fuel oil	3,199	3,056	4.7	3,013	2,950	2.1
≤ 0.05 percent sulfur	1,826	na	na	598	na	na
> 0.05 percent sulfur	1,373	na	na	2,415	na	na
Residual fuel oil	833	1,110	(25.0)	1,006	1,077	(6.6)
All other oils (including crude losses)	4,395	4,568	(3.8)	4,267	4,332	(1.5)
Reclassified[5]	-204	-91	na	-173	-164	na
Total domestic products supplied	17,173	17,524	(2.0)	17,037	17,000	0.2
Exports	925	902	2.6	988	916	7.9
Total disposition	18,098	18,426	(1.8)	18,025	17,916	0.6
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,885	7,126	(3.4)	6,849	7,192	(4.8)
Natural gas liquids	1,728	1,722	0.4	1,745	1,687	3.4
Other supply[6]	1,110	1,206	(8.0)	1,260	1,214	3.8
Total domestic supply	9,723	10,054	(3.3)	9,854	10,093	(2.4)
Imports:						
Crude oil (excluding SPR imports)	6,927	6,647	4.2	6,648	6,082	9.3
From Canada	938	761	23.3	887	796	11.4
All other	5,989	5,886	1.8	5,761	5,286	9.0
Products	1,847	1,810	2.0	1,766	1,800	(1.9)
Residual fuel oil	292	376	(22.3)	345	361	(4.4)
All other	1,555	1,434	8.4	1,421	1,439	(1.3)
Total imports	8,774	8,457	3.8	8,414	7,882	6.8
Total supply	18,497	18,511	(0.1)	18,268	17,975	1.6
Stock change, all oils	399	85	na	243	59	na
Refinery Operations:						
Input to crude distillation units	14,021	13,651	2.7	13,876	13,602	2.0
Operable capacity	15,145	15,287	(0.9)	15,155	15,490	(2.2)
Refinery utilization[7]	92.6	89.3	na	91.6	87.8	na
Crude oil runs	13,750	13,584	1.2	13,609	13,420	1.4

	October 1993	September 1993	October 1992	% Change From Month Ago	% Change From Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	332.0	328.9	332.7	0.9	(0.2)
Unfinished oils	101.6	101.7	104.1	(0.1)	(2.4)
Total motor gasoline	210.3	208.4[R]	204.4	0.9	2.9
Finished oxygenated	27.3	19.8[R]	na	37.9	na
Finished reformulated	0.0	0.0	na	na	na
Finished other	145.7	152.0[R]	na	(4.1)	na
Blending components	37.3	36.7[R]	37.4	1.6	(0.3)
Naphtha-jet	3.2	3.2	4.6	0.0	(30.4)
Kerosine-jet	37.5	38.6	42.8	(2.9)	(12.4)
Distillate fuel oil	138.3	127.4	136.8	8.6	1.1
≤ 0.05 percent sulfur	56.5	55.3	na	2.2	na
> 0.05 percent sulfur	81.8	72.1	na	13.5	na
Residual fuel oil	43.8	41.5	45.0	5.5	(2.7)
All other oils	223.9	228.5[R]	196.4	(2.0)	14.0
Total all oils	1,090.6	1,078.2[R]	1,066.8	1.2	2.2

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. 2—Based on API estimated data converted to a monthly basis. 3—Source: U.S. Energy Information Administration (including any adjustments). 4—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). 5—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. 6—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. 7—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". R—Revised.

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Monthly Statistical Report

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SUMMARY

Reversing the prior month's unusual year-to year decline, total petroleum deliveries rose in November by 1.1 percent. Surprising strength for distillate fuel oil, as well as for gasoline, were at least partly offset by a 6.3 percent decline for kerosine jet fuel and a fall-off in residual fuel oil deliveries of 11.7 percent.

Distillate fuel oil deliveries jumped more than 12 percent over last year's levels, 200-300 thousand B/D over what would have been expected based on recent prior deliveries trends. Given that deliveries of low-sulfur diesel continued at a strong, 1.7 million B/D rate in November, not much less than October's vigorous 1.8 million B/D—and substantially above estimated annual rates of demand for on-highway diesel of 1.4-1.5 million B/D—it seems likely that distillate deliveries' jump in November had more to do with continued adaption to the new regulations for on-highway fuel than anything else.

At refineries, despite slower year-to-year growth in overall activity, production of distillate fuel oil continued strong. Total distillate production rose nearly 8 percent over a year ago, and output of low-sulfur distillate continued at October's high level of 1.8 million B/D. Overall input to distillation units rose only 1 percent from last November.

Meanwhile, domestic crude oil production's decline was moderated by enhancements to Alaskan production facilities as well as the first full month of production from the Point McIntyre field. For November, U.S. petroleum production declined 1.5 percent or a little over 100 thousand B/D. However, for the year to date, domestic crude oil output has still dropped more than 300 thousand B/D or nearly 5 percent.

Total imports jumped 11 percent from last November's levels, despite a decline for products imports. The increase in crude oil imports helped to build crude inventories, which rose 7 million barrels to 339 million barrels at month-end. Distillate stocks also rose by 7 million barrels to 145 million barrels, roughly the same level as a year ago.

Note: a special analysis of winter distillate supplies begins on page 6.

PRODUCT SUPPLIED

Gasoline

DELIVERIES LIKELY STRONGER THAN CONSUMPTION.

Gasoline deliveries rose an unusually strong 3.8 percent in November over levels one year earlier. November's growth, combined with reasonably strong deliveries in recent prior months, means that growth in gasoline deliveries over the past four months has averaged about 3 percent, or roughly 2 percentage points higher than many analysts have been estimating for underlying consumption. It seems highly unlikely that this represents a genuine strengthening in underlying consumption.

Data on highway travel, for example, available through September, have not shown any quickening in growth rates in recent months. September's miles traveled were up 2.8 percent, year to year, well within the 2.5-3.0 percent range of recent prior months. After accounting for the effects of fleet fuel efficiency improvements, this agrees more with the estimated underlying consumption growth rate than with recent deliveries increases.

Oxygenated gasoline deliveries rose from 1.8 million B/D in October to 2.0 million B/D in November, as the remaining regions mandated for winter oxygenated gasoline joined those whose season began in October. As a share of overall gasoline deliveries, oxygenated gasoline accounted for close to 27 percent of deliveries in November, up slightly from 24 percent in October.

Published December 15, 1993

Distillates

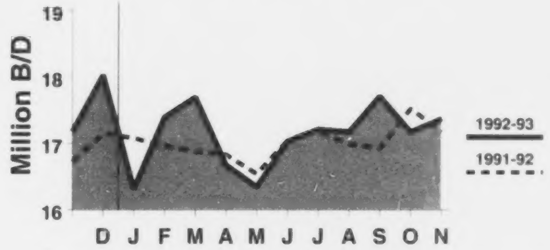
HIGH DELIVERIES CONTINUE FOR LOW SULFUR.

November's distillate deliveries surged more than 12 percent over year-ago levels, to nearly 3.3 million B/D—their highest November level in fifteen years. November's deliveries were 200-300 thousand B/D above what might have otherwise been expected, based on recent deliveries trends.

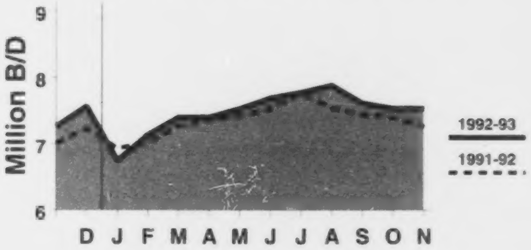
Although unusually cold weather can sometimes explain unusual jumps in deliveries, this was hardly the case in November. Nationally, the month was only about 5 percent colder than normal and only slightly colder than a year ago. In fact, in the Northeast, where heating oil consumption is concentrated, November actually averaged slightly warmer than a year ago.

API ESTIMATES

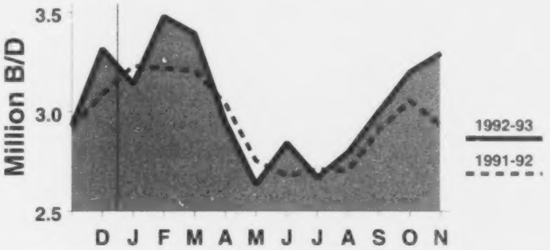
	NOVEMBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.4	1.1	17.1	0.5
Crude production	6.9	(1.5)	6.9	(4.5)
Total imports	8.7	11.0	8.5	7.5
Stocks (million bbl)	1,095	3.2	na	na



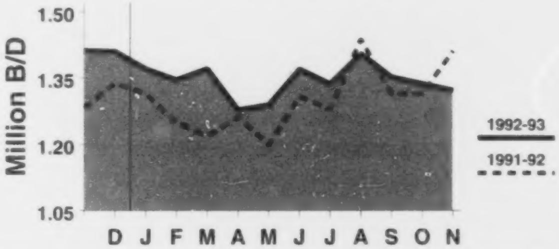
Total Deliveries



Motor Gasoline Deliveries



Distillate Deliveries



Kerosine Jet Fuel Deliveries

More likely, November's strong deliveries were related to continued adjustment to the new on-highway diesel regulations which became effective October 1 and which apply to nearly half the market for distillate fuel oil. Deliveries of low-sulfur diesel, in particular, continued at a very strong 1.7 million B/D in November, not much less than October's 1.8 million B/D. Deliveries both months were substantially above underlying on-highway consumption, estimated at 1.4-1.5 million B/D on an annual basis. According to Interstate Commerce Commission data, retail prices by month-end had fallen to levels only about 3 cents higher than at the end of September.

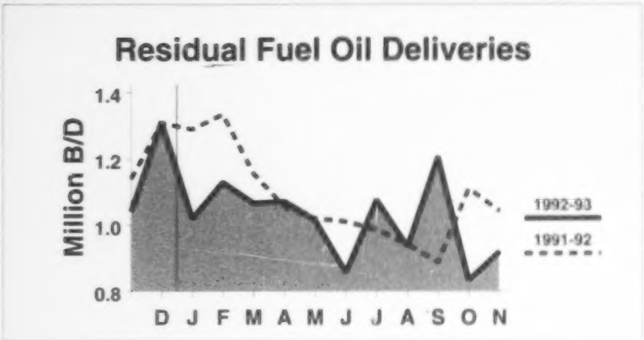
Kerosine Jet Fuel
DOWN MORE THAN 6 PERCENT. November deliveries of jet-kerosine dropped by 89 thousand B/D, or over 6 percent compared to the same period a year ago. While approximately one-third of this decline was attributable to above-trend deliveries last November, the disruption in air travel service due to the strike at American Airlines and a possible decline in jet blending requirements also contributed to the year-to-year decline in jet deliveries.

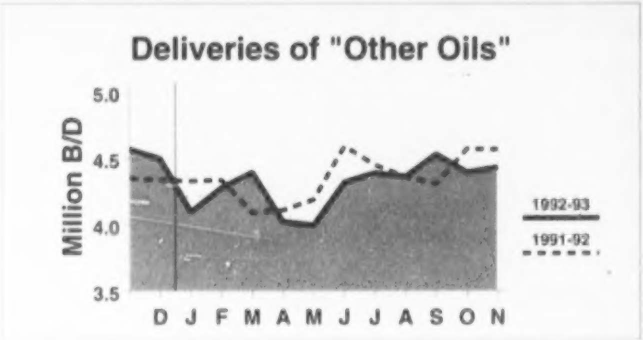
For the past several months, airline industry statistics indicated that the year-to-year growth in miles flown had been relatively flat, increasing only in the 1-2 percent range. Data from the Department of Transportation on jet fuel consumption by U.S. airlines were in concurrence, with the year-to-year growth in fuel consumption averaging about 2 percent. Because of the disruptive effects of the strike of American Airlines, preliminary traffic reports issued by some of the major airlines indicate gains for companies which honored American tickets, but for the industry as a whole it appears that total miles flown decreased by 1-2 percent year-to-year. The decrease in miles flown would have been more severe, but because American continued to fly its cargo runs and to fly partially filled or empty planes in order maintain the positioning of its fleet, the impact on both miles flown and jet deliveries was lessened.

The year-to-year decline in jet fuel deliveries may also have been the result of a decline in incremental blending. Jet fuel is often blended with diesel fuel to prevent crystallization in colder weather as well as to lower the sulfur content of the diesel. However, since some of the colder regions of the nation actually experienced warmer weather this November compared to last and because jet fuel had a 4-5 cents per gallon premium over diesel (which exceeded last November's 1-2 cents premium), it is likely that jet fuel requirements for incremental blending were reduced.

Residual Fuel Oil
DELIVERIES CONTINUE TO SAG. Warmer temperatures in the Northeast during November as well as high end user stocks tempered any increases in deliveries of residual fuel oil. Even the continued price advantage of resid over natural gas, which was greater during November than in previous months, failed to stimulate a rise in resid deliveries. For the month, deliveries of resid declined by 122 thousand B/D, or 11.7 percent, compared to a year ago. For the year-to-date, resid deliveries were off a lesser 6 percent.

While this November proved to be slightly colder than last for the nation as a whole, both New England and the Mid-Atlantic experienced temperatures that were 3-4 percent warmer than last year. This resulted in electricity generation levels dropping about 1 percent in both those regions. Although state data are not yet available, it appears that in Florida, electricity output for the month was up 2-3 percent compared to the same period a year ago.





With the warmer weather in the Northeast suppressing the demand for electricity output for space heating purposes and already high end user stocks, utilities may have had little additional storage available for incremental purchases. Based on the most recent data available from the Department of Energy, it appears that the surge in resid deliveries during September may have been caused by stock rebuilding by electric utilities. For the month of August, the DOE data showed that resid burn at electric utilities had increased by 70 percent compared to the same month a year ago. This increase resulted in resid stocks held at utilities dropping to their lowest level in 20 years. Given that resid prices were competitive with natural gas and with the impending start date of November 1 for FERC Order No. 636 for the unbundling of natural gas transportation and storage services, it is likely that utilities may have taken advantage of lower resid prices during September to make incremental purchases for inventory build and perhaps to have as an additional source of energy in the event that there were any disruptions in natural gas supply from the start up of FERC Order No. 636.

Even though resid prices continued to decline during November, the combination of moderate temperatures in the Northeast and tight storage capacity constrained buyers' ability to increase purchases. As was the case in October, both the price of resid and natural gas continued to fall during November. For grades of resid containing 1 percent sulfur or less, the average price was $12.25-13.60 per barrel during November, or $1.99-$2.08 per million BTU. For areas such as Florida where it is permissible to use high sulfur resid, the average spot price was even lower, declining to an average of $10.00 per barrel, or $1.59 per million. These lower prices were reflected in the price paid by utilities. Resid price for nearly all major cities in the Northeast were significantly lower than city gate prices for natural gas.

Other Oils

DOWN FOR SECOND MONTH IN A ROW.

Declining for the second month in a row, deliveries of "other oils" fell 3.0 percent for November versus one year earlier. At least part of the reason for the year-to-year decline lies in unusually strong deliveries a year ago for propane, which had been running 100-150 thousand B/D above the recent prior trend. However, even without the anomalies in the year-ago period, deliveries of "other oils" would still have been only about flat for the month.

SUPPLY

Production

ALASKAN OUTPUT NEARLY MATCHES YEAR-AGO LEVEL.

Due to a boost to production from the first phase of the GHX-2 gas handling facility, as well as from the recent start-up of production at Point McIntyre, Alaskan production reached 1.67 million B/D in November. This was its highest level since last December and was down only 0.5 percent from a year ago. Completion of the first phase of the North Slope gas-handling installation has added roughly 50 thousand B/D of capacity, and Point McIntyre's first full month of production contributed another 50 thousand B/D or so to November's Alaskan figure.

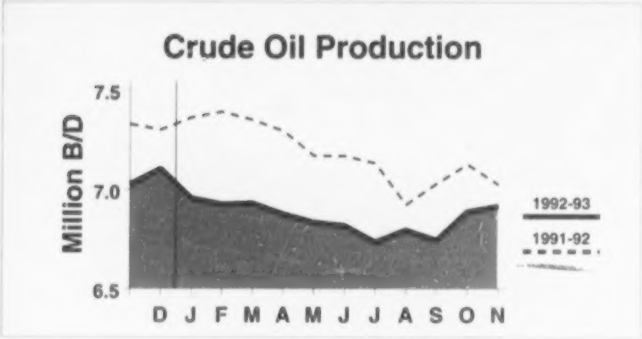
Meanwhile, lower 48 production slipped only about 1.9 percent in November versus one year earlier, so that the decline for all U.S. production amounted to only 1.5 percent or a little over 100 thousand B/D. For the year to date, however, domestic crude oil output has still dropped more than 300 thousand B/D or nearly 5 percent.

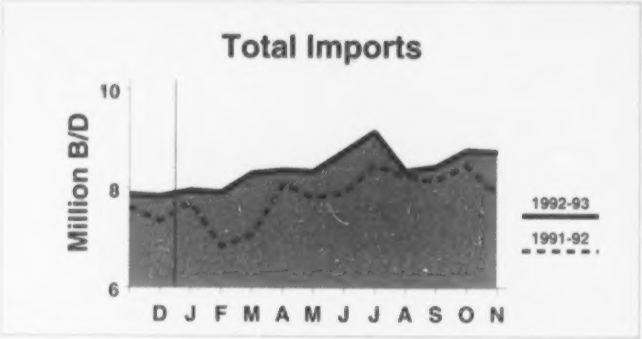
Imports

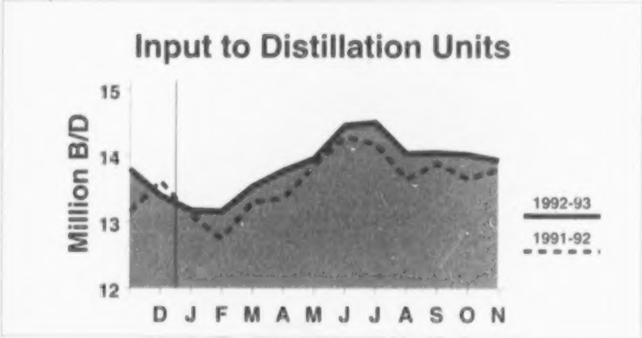
CRUDE OIL JUMPS, PRODUCTS DECLINE.

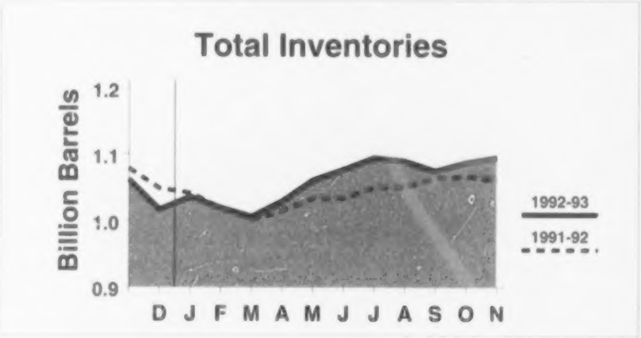
Total imports of crude oil and refined petroleum products during November jumped 11.0 percent compared to the same period a year ago. The large, 940 thousand B/D increase in crude oil imports more than offset the 72 thousand B/D decrease in refined product imports, thus accelerating the year-to-date import growth to 7.5 percent. However, with the growth in demand for refined products barely rising and domestic crude oil production declining at rate of 4.5 percent, the year-to-date increase in imports exceeds our estimate of underlying growth of 5 percent, or approximately 400 thousand B/D.

As was the case in October, the only major refined product group with an increase in imports during November was motor gasoline. At 181 thousand B/D, imports of motor gasoline increased 6.5 percent over last November. Imports of residual fuel oil had the largest decrease, dropping nearly 28 percent to 297 thousand B/D. Distillate imports declined over 20 percent to 188 thousand B/D while imports of kerosine-jet fuel declined a lesser 3.6 percent to 84 thousand B/D.









Refinery Operations

GROWTH IN ACTIVITY SLOWS IN NOVEMBER. Year-to-year growth in refinery inputs, which had been showing gains of 2 to 3 percent in recent months, managed just a 1.0 percent rise in November. Nevertheless, gasoline output, including blending of oxygenates outside of refineries, rose 3.2 percent for the month, and production of oxygenated gasoline alone reached nearly 2.1 million B/D—27 percent of all finished gasoline produced.

As for distillate fuel oil, the strength in distillate deliveries was partially reflected in a 7.8 percent jump in output of this product from last November's level. At 3.49 million B/D, the month's distillate production continued at roughly the same rate as in October, with production in both months being among the highest in fifteen years. Production of low-sulfur diesel continued at October's high level of about 1.8 million B/D, well above estimated underlying consumption of on-highway diesel.

Meanwhile, weaker deliveries for the other major products also showed up in refinery production slates. Kerosine jet fuel production dropped 0.9 percent from last November, its fourth year-to-year decline in a row, while residual fuel oil production dropped 7.2 percent.

Inventories

CRUDE, PRODUCTS BOTH INCREASE. Inventories of crude oil and major products all rose in November compared with the end of October. For total stocks, the 7 million barrel rise put them at 1.095 billion barrels, up 34 million barrels from one year earlier.

Crude oil stocks, continuing the rise they have experienced since their low this year of 321 million barrels in September, increased 7 million barrels over the month. Nevertheless, November's ending levels of 339 million barrels were not atypical for the month compared with recent prior Novembers.

Distillate stocks' 7 million barrel increase during November put month-end levels at 145 million barrels, nearly the same as a year ago—and last November's distillate stocks had been at the top end of the 120-146 million barrel range of recent Novembers. Despite this November's high level of deliveries for low-sulfur diesel, refinery output was even higher, and inventories of this grade rose 6 million barrels to 63 million barrels. Inventories of high-sulfur distillate, particularly relevant to the heating oil market as the peak of the winter demand season begins, remained at 82 million barrels, matching October's level.

On the East Coast, stocks of all distillate as of the end of November, at 68 million barrels, were the same as last November's. Roughly 80 percent of the East Coast's distillate inventories were of the high-sulfur variety, reflecting the particularly large market share that heating oil use has in this region. Total distillate stocks in the Midwest were also about the same as at the end of last November.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	November			YEAR-TO-DATE		
	1993[2]	1992[3]	% Change	1993[4]	1992[3]	% Change
Disposition:						
Total motor gasoline	7,534	7,261	3.8	7,478	7,358	1.6
Finished oxygenated	2,003	na	na	1,080	na	na
Finished reformulated	0	na	na	0	na	na
Finished other	5,531	na	na	6,398	na	na
Naphtha-jet	82	117	(29.9)	117	145	(19.3)
Kerosine-jet	1,322	1,411	(6.3)	1,344	1,301	3.3
Distillate fuel oil	3,294	2,929	12.5	3,033	2,948	2.9
≤ 0.05 percent sulfur	1,688	na	na	715	na	na
> 0.05 percent sulfur	1,606	na	na	2,318	na	na
Residual fuel oil	919	1,041	(11.7)	1,010	1,074	(6.0)
All other oils (including crude losses)	4,431	4,568	(3.0)	4,291	4,353	(1.4)
Reclassified[5]	-208	-145	na	-175	-163	na
Total domestic products supplied	17,374	17,182	1.1	17,098	17,016	0.5
Exports	940	995	(5.5)	979	923	6.1
Total disposition	18,314	18,177	0.8	18,077	17,939	0.8
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,916	7,024	(1.5)	6,856	7,177	(4.5)
Natural gas liquids	1,850	1,754	5.5	1,753	1,693	3.5
Other supply[6]	1,054	1,362	(22.6)	1,232	1,227	0.4
Total domestic supply	9,820	10,140	(3.2)	9,841	10,097	(2.5)
Imports:						
Crude oil (excluding SPR imports)	7,061	6,121	15.4	6,697	6,086	10.0
From Canada	910	784	16.1	888	795	11.7
All other	6,151	5,337	15.3	5,809	5,291	9.8
Products	1,679	1,751	(4.1)	1,774	1,796	(1.2)
Residual fuel oil	297	411	(27.7)	342	365	(6.3)
All other	1,382	1,340	3.1	1,432	1,431	0.1
Total imports	8,740	7,872	11.0	8,471	7,882	7.5
Total supply	18,560	18,012	3.0	18,312	17,979	1.9
Stock change, all oils	+246	-165	na	+235	+40	na
Refinery Operations:						
Input to crude distillation units	13,930	13,795	1.0	13,876	13,619	1.9
Operable capacity	15,145	15,304	(1.0)	15,155	15,473	(2.1)
Refinery utilization[7]	92.0	90.1	na	91.6	88.0	na
Crude oil runs	13,680	13,547	1.0	13,615	13,432	1.4

	November 1993	October 1993	November 1992	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	338.5	332.0	325.4	2.0	4.0
Unfinished oils	95.6	101.6	102.3	(5.9)	(6.6)
Total motor gasoline	221.8	210.3	213.9	5.5	3.7
Finished oxygenated	29.5	27.3	na	8.1	na
Finished reformulated	0.0	0.0	na	na	na
Finished other	152.4	145.7	na	4.6	na
Blending components	39.9	37.3	37.3	7.0	7.0
Naphtha-jet	2.9	3.2	4.7	(9.4)	(38.3)
Kerosine-jet	38.4	37.5	41.5	2.4	(7.5)
Distillate fuel oil	144.6	138.1[R]	146.3	4.7	(1.2)
≤ 0.05 percent sulfur	62.7	56.5[R]	na	11.0	na
> 0.05 percent sulfur	81.9	81.6[R]	na	0.4	na
Residual fuel oil	45.4	43.8	46.5	3.7	(2.4)
All other oils	208.2	221.5[R]	181.2	(6.0)	14.9
Total all oils	1,095.4	1,088.0[R]	1,061.8	0.7	3.2

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API [illegible]ly *Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. **2**—Based on API estimated data converted to a monthly basis. **3**—Source: U.S. Energy Information Administration (including any adjustments). **4**—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). **5**—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. **6**—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. **7**—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised.

WINTER DISTILLATE FUEL OIL SUPPLY CAPABILITY

This article examines distillate supply capability over the peak months of the current heating season. It concludes that, barring unforeseen disruptions, overall supply capability from refineries, primary inventories, and imports appears adequate to meet distillate demand within the range of levels likely to occur.

Distillate market overview

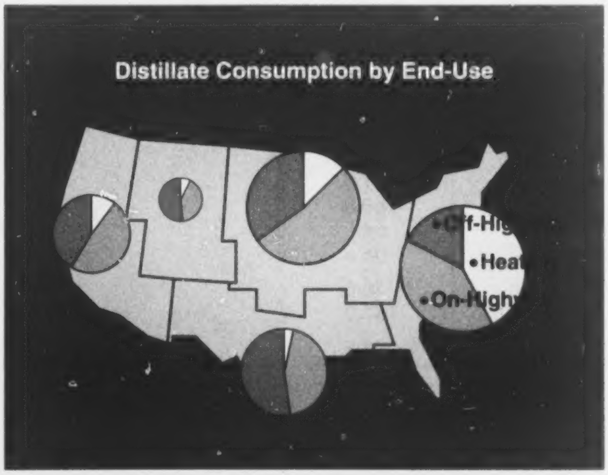
Heating oil makes up only a fifth of overall distillate fuel oil consumption on an annual basis. However, the highly seasonal nature of heating-related use of distillate makes it of particular interest this time of year, since it is responsible for giving distillate demand its seasonal peak. In fact, during the peak of the heating season heating oil can account for half of all distillate use. More than 90 percent of heating oil usage occurs on the East Coast and in the Great Lakes area.

As for the remainder of the distillate market, the largest single sector is on-highway diesel, for which the new low-sulfur requirements, effective October 1, apply. This sector alone accounts for nearly half of distillate deliveries on an annual basis. Other distillate end-use sectors, which, as with heating oil, fall in the high-sulfur category, include industry, farms, railroads, water transportation, and electric utilities.

Distillate supply

Looking first at possible demand, industry forecasts have implied deliveries levels from 3.36 to 3.41 million B/D for the next four months (December-March), or roughly 2 to 2.5 percent higher than for the same period last year. Since heating oil demand is obviously weather-sensitive, the effects of a colder-than-normal winter should also be considered. According to our estimates, a 1-in-20 cold winter would boost demand by roughly 120 thousand B/D over this four-month period. Since, over shorter periods, weather tends to deviate more sharply from normal than over the season as a whole, short-term surges in demand could easily be higher.

Taking the high end of the deliveries projections plus the estimated effect of an unusually cold winter yields a high-end scenario of around 3.53 million B/D. This would be about 6 percent above the 3.33 million B/D for the same period a year ago. In other words, in this high-demand scenario, as much as another 200 thousand B/D of additional supply would be needed over last year's levels.


Distillate Consumption by End-Use

Each of the supply components—refinery output, inventory draws, and imports—will be examined to see what portion of this potential incremental demand could potentially be supplied from each, if necessary. Though the mix of components will depend on economics and logistics, overall potential supply capability appears adequate to meet likely levels of deliveries.

Refinery production. This component has in recent years accounted for an average of 89 percent of distillate supply over the December-March period. Despite the amount of attention often paid to inventories, inventory draws have accounted for only 5 to 12 percent of supplies over the past five December- March periods. Net imports, that is, imports minus exports, have contributed an average of only 2 percent. And, in the most recent three seasons of relatively weak demand, imports have not been called on to contribute anything, on net, to meet domestic demand.

Could refineries supply the additional 200 thousand B/D over last season's deliveries given in the high-demand scenario we have constructed? We believe they could supply a substantial portion, if necessary. Last season, refineries supplied 2.96 million B/D of distillates between December and March. We believe that, based on historical data on refinery runs and yields, that refineries could potentially produce at least an additional 150-250 thousand B/D, or about 3.1 to 3.2 million B/D over this period.

Higher levels of output no doubt could be achieved over shorter periods—in fact, over the past two months, nearly 3.5 million B/D of distillates have been produced. However, it should be noted that after some point, the harder refineries are pushed to produce distillate, the more likely it is that output of gasoline and other products could be hindered. Nevertheless, refinery production could supply a substantial portion of the additional distillate required in an extraordinarily cold winter.

Inventories. As of the beginning of December, inventories of high-sulfur distillate stood at 82 million barrels, out of a total for all distillate fuel oil of 145 million barrels. Because additional heating oil supplies are most likely to come out of the high-sulfur, "off-highway" segment of inventories, a conservative estimate of available supplies from inventories should focus on this portion.

Unfortunately, with little working experience in the new, low- sulfur/high-sulfur environment, estimates of how much high-sulfur inventories could be drawn down over the remainder of the season can only be tentative. Making conservative assumptions about minimum operating levels and making some allowance for the decreased flexibility of logistics under the new, segmented distillate market, a conservative estimate of how far high-sulfur stocks could be drawn would be to a level of about 50 million barrels. This still leaves a potential drawdown of high-sulfur distillate stocks of around 270 thousand B/D over the next four months, more than enough to cover the high-demand scenario being considered here. Low-sulfur distillate stocks could possibly be called on as well, if necessary, although this might in some cases pose logistical problems, and in any event would entail the use of a fuel that is more costly to produce.

It should be pointed out that spreading the potential stock draw over many months understates the amount of distillates that can potentially be supplied from inventory over shorter periods. In fact, distillate inventories are typically drawn down mainly during a few peak months. In recent years inventory draws of as much as 700 thousand B/D in a single month have been experienced.

Imports. Finally, net imports have traditionally provided some additional distillate supplies during the heating season. However, this has not been the case in recent seasons because of weaker domestic demand. For the past three seasons, exports have actually matched or exceeded imports. In other words, the U.S. has been a net exporter of distillates even during the winter season. This suggests that, should domestic demand strengthen, at least part of the increment could potentially be provided through higher imports or lower exports than have been experienced in the recent past.

Although it could be argued that assigning a definitive "capacity" figure to net imports is not meaningful, recent historical levels have often run in the neighborhood of 270-280 thousand B/D during the December-March period. This alone would be more than enough to meet the potential 200 thousand B/D increment in demand.

Thus, barring unforeseen disruptions in supply or distribution, there appears to be enough additional supply capability from refineries, primary inventories, and imports, compared with last season's, to meet levels of demand likely to be experienced.

Impact of low-sulfur regulations and new tax collection procedures

Since October 1, diesel for on-highway use has been required by EPA to contain only 0.05 percent sulfur. This is roughly one-fifth of the level that was typical before. Minimum cetane numbers or a ceiling on aromatics content are to be maintained as well, the goal being to reduce particulate emissions. Since on-highway diesel accounts for nearly half of the demand for distillate fuel oil, this rule has had a major impact on the distillate market, and refiners have spent an estimated $3 billion in order to meet the new specifications. California issued even stricter product specifications, although it has granted temporary variances to some refiners and end-users in an effort to smooth the transition.

This is not the first processing challenge refiners have faced in recent years. Some of the others include the phase-down of lead in gasoline since 1973, the overall decline in the quality of crude oil, controls on gasoline volatility beginning in the summer of 1989, the advent of oxygenated fuel requirements last winter—and reformulated gasoline regulations due to be implemented in the next few years. Though these have at times been costly to implement, the refining industry as a whole has met the challenges.

Market impacts. From the standpoint of heating oil, which the law does not require to meet the new lower sulfur limit, the effects of the change are mostly indirect. The existence of two distillate products where there was usually only one before complicates production and distribution logistics.

Further complicating the picture are the new excise tax collection rules of the Internal Revenue Service. In the event of an unexpected surge in heating oil demand, low-sulfur distillate fuel oil could still be sold for off-highway use. But unless it is dyed red, ultimate consumers (or, in the case of sales to state and local governments or farmers, the seller) would have to pay the Federal excise tax—at 24.4 cents per gallon—and then apply for a refund. In addition, because of the higher cost of manufacturing low-sulfur product, there would be an extra cost for refiners and possibly for consumers.

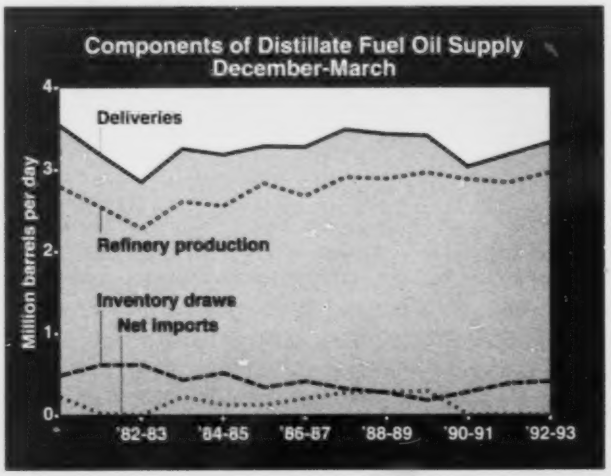
As for the on-highway sector, estimates of refinery capability to produce low-sulfur distillate have been running in the neighborhood of 2 million B/D, while on-highway diesel demand has been estimated at on the order of 1.4-1.5 million B/D. So, from the standpoint of the country's refinery capability to produce low-sulfur diesel, capacity appears adequate. Low-sulfur production over the past two months has averaged 1.8 million B/D, well above estimated demand levels.

Supply logistics. Because of economics and logistics, not every refinery has been modified to produce the new fuel. This makes sense, since, from a business standpoint, this is just another "make or buy" decision for refiners. For those who have the lower-cost possibilities for producing low-sulfur diesel themselves, it makes sense to make the modifications and even sell or exchange additional low-sulfur product with other refiners. But refiners who would have to make the most costly changes would more likely forego the refinery modifications and buy product from the lower-cost producers.

The rule complicates storage and logistics, since before there was usually only one distillate fuel that could be shifted to either diesel or heating use, but now two distinct products exist. Refiners and distributors have been faced with various options. These include constructing new storage, juggling existing storage, or even switching to all low-sulfur diesel. This last option could raise production costs, but it would avoid the costs and logistical headaches of an additional fuel grade.

In any event, subdividing fuel grades, such as has recently been done for distillate, has the effect of increasing the relative volatility of demand in proportion to supply. For example, a sudden cold snap might boost overall distillate demand by, say 5 percent, but measured only against the non-highway portion of distillate, the surge would be more than double that percentage.

In addition, since there are fewer suppliers of low-sulfur distillate than for distillates over all, a problem at one refinery can



have a larger relative impact on supply than in times past. In short, the subdivision of petroleum products into often mutually-exclusive grades reduces the flexibility of the system to respond to unexpected demand or unanticipated supply problems. The result is a greater likelihood of supply/demand imbalances and greater potential market volatility.

Conclusion

Barring unforeseen circumstances, distillate supplies from refineries, primary inventories, and net imports appear adequate to meet demand levels likely to occur over the remainder of the winter. However, the segmentation of petroleum product markets by environmental regulations, we believe, reduces supply flexibility and increases the potential market volatility for these products.

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Monthly Statistical Report

Finance, Accounting, and Statistics Department

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SUMMARY

U.S. petroleum consumption rose only marginally in 1993, but because of the continuing decline in domestic crude oil production, the underlying need for imports increased. Largely as a result of this, total petroleum imports rose 7.8 percent to 8.5 million B/D, and amounted to nearly 50 percent of domestic deliveries—the highest share ever. The previous peak had been 47.7 percent in 1977.

Paradoxically, imports in 1993 were some 300 thousand B/D lower than they had been sixteen years previously. But because consumption was also lower—by nearly 7 percent—total imports' share for 1993 was still calculated at 49.5 percent, a larger share of a smaller total. Putting a slightly longer perspective on current petroleum consumption, it is interesting to note that domestic consumption in 1993 was roughly the same as in 1973, the year of the Arab oil embargo. But much else has changed since then (see accompanying article, page 6).

With the year's domestic consumption rising only marginally, the largest single factor behind the increase in imports was declining crude oil production. Total domestic crude oil output for 1993 fell 4.3 percent, or more than 300 thousand B/D, to its lowest level since 1958. This was nearly 30 percent below the 1970 peak of over 9.6 million B/D. The decline rate lessened by the fourth quarter to 2.6 percent, or about 180 thousand B/D, because of several developments, including additional gas-handling facilities on the North Slope and the coming onstream of the Point McIntyre field. As a result of these events, year-end Alaskan crude oil output nearly matched year-ago levels.

As for demand, although economic growth got off to a slow start in the first half of 1993, for the year as a whole it managed to roughly match 1992's 2.6 percent rise. Nevertheless, growth in petroleum deliveries slowed to only 0.4 percent from 2 percent in 1992 because of slower growth outside the major products. For the fourth quarter, deliveries actually declined 0.6 percent. With petroleum deliveries rising only about 60 thousand B/D, oil's share of total energy consumption fell to just over 40 percent, its lowest level in more than forty years.

For the major light products, increases in deliveries for 1993 were either the same or slightly stronger than in 1992. Gasoline deliveries rose 1.5 percent for the year, up marginally from the 1.1 percent increase for 1992. Distillate deliveries' increase of 2.1 percent was roughly the same as for the prior year. For kerosine jet fuel, deliveries's growth of 3.3 percent in 1993 surpassed the 1.1 percent of 1992, despite slower growth in air traffic. But residual fuel oil, which has fallen every year for the past five years, dropped 6.3 percent, slightly more than in 1992.

Despite slower overall growth in deliveries in 1993 than in 1992, the increase in refinery activity was stronger. Input to distillation units rose 2.0 percent in 1993, up from the 0.7 increase of 1992. With inputs estimated distillation capacity falling by 2 percent, utilization of U.S. refining capacity reached 91.5 percent, the highest annual rate in at least twenty years.

Total inventories ended 1993 at a level 63 million barrels higher than for 1992, putting them at their highest year-end level in seven years. Distillate stocks at the end of December stood at 145 million barrels, also at the high end of recent-year experience for the month. Although the need to keep the newly-mandated low-sulfur product separated from the high-sulfur variety may have added to minimum inventory requirements, year-end distillate stocks still appeared more than adequate.

PRODUCT SUPPLIED

Energy

OILS' SHARE DROPS. Paralleling the pattern of economic growth, total U.S. energy consumption rose for the second year in a row in 1993. The increase in energy consumption of 2 percent, as with the 1.3 percent rise in 1992, still lagged behind growth in the economy, estimated at around 2.6-2.8 percent for both years.

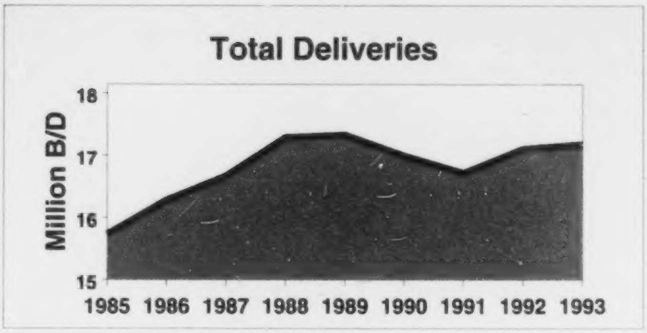
Since the late 1970s, petroleum consumption has regularly grown less or declined more than overall energy consumption, and this trend continued in 1993. As a result, oil's share of total energy consumption fell to just above 40 percent, its lowest in more than 40 years. Oil's share had peaked at 48.7 percent in 1977.

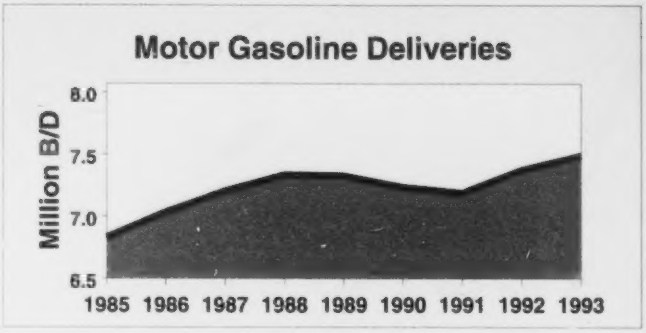
Compared with petroleum, growth rates in 1993 for all the other major energy sources were stronger. For the seventh year in a row, natural gas consumption increased more (or declined less) than that of petroleum. Continued growth, particularly in industri-

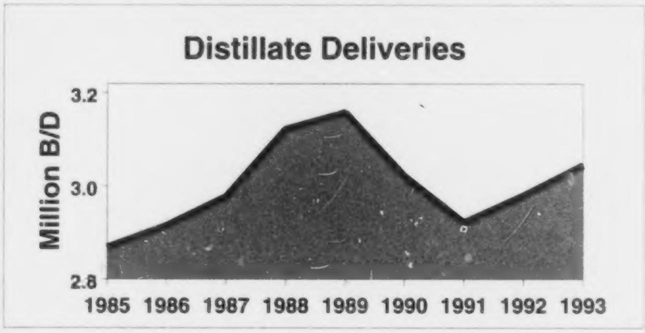
API ESTIMATES

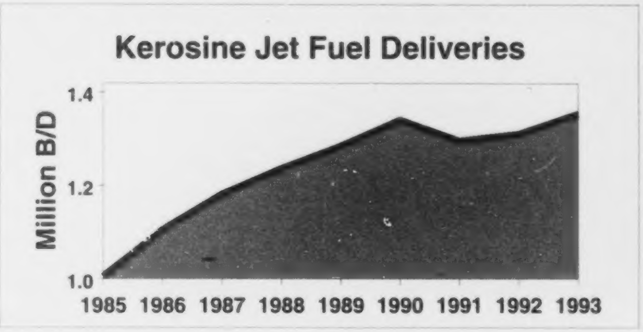
	DECEMBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.8	(1.3)	17.2	0.4
Crude production	6.9	(2.8)	6.9	(4.3)
Total imports	8.4	6.9	8.5	7.8
Stocks (million bbl)	1,080	6.2	na	na

Published January 19, 1994

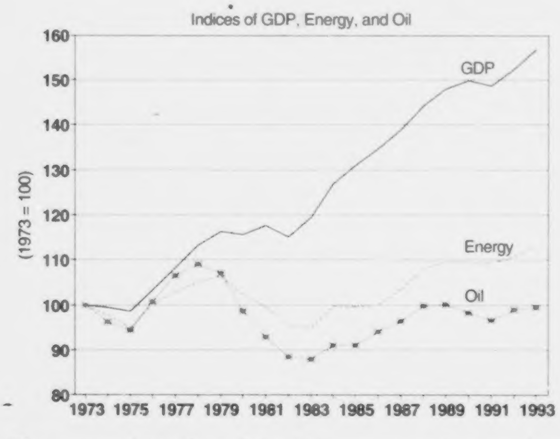

Total Deliveries


Motor Gasoline Deliveries


Distillate Deliveries


Kerosine Jet Fuel Deliveries

al use of natural gas, contributed to an estimated 3 percent rise. In fact, over the past five years, industrial use of natural gas has risen roughly 20 percent, twice the rate for residential/commercial usage. For coal, growth in electricity generation led to a roughly 3 percent increase in consumption for 1993. Nuclear generation rose slightly as well, and hydro generation bounced back from depressed 1992 levels with an increase of around 10 percent.



The energy intensity of the U.S. economy has continued to inch downward in recent years, though at a slower rate than in the 1970s and early 1980s. As measured by BTUs consumed per dollar of Gross Domestic Product, energy intensity apparently declined slightly in 1993, and has fallen 3 to 4 percent over the past five years. Over the same five-year period, petroleum intensity—oil consumed per dollar of Gross Domestic Product—has fallen more than twice that amount, or 9 percent. Since the early 1970s, overall energy intensity in the U.S. has dropped roughly 28 percent, while conservation and fuel switching has reduced petroleum intensity by 37 percent.

ESTIMATED ENERGY CONSUMPTION BY FUEL GROUP
(Quadrillion BTU)

	Consumption			Market Share		
Fuel	1992	1993	Percent Change*	1992	1993	Change (percentage pts.)
Coal	18.9	19.5	+3.2%	22.9%	23.2%	+0.3
Natural Gas	20.1	20.8	+3.2%	24.4%	24.7%	+0.3
Petroleum	33.6	33.7	+0.1%	40.9%	40.1%	-0.8
Other	9.7	10.0	+3.7%	11.8%	12.0%	+0.2
Total	82.3	84.0	+2.0%	100.0%	100.0%	

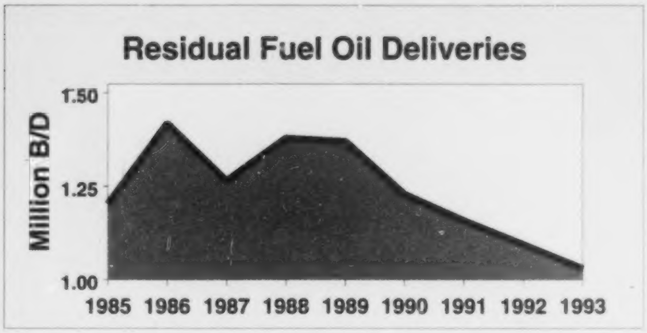
* Because 1992 was a leap year and data here are presented as annual totals, the percentage change for petroleum will differ slightly from that computed using data in daily averages (as is done elsewhere in this Report).

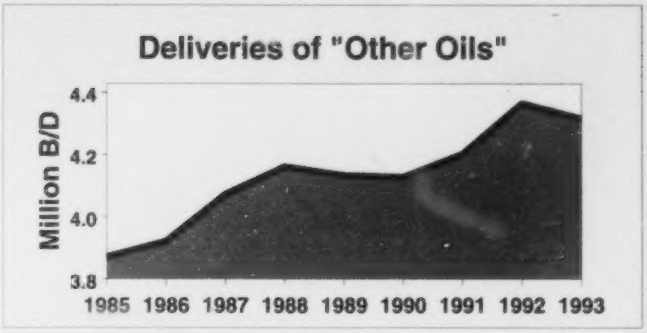
Data presented here do not include the smaller, but non-negligible category of fuels such as most wood, waste, wind, geothermal, and solar, which are for the most part not commercially bought or sold and are not measured with the timeliness or accuracy of the major energy sources.

Gasoline
CONSUMPTION INCHES AHEAD.

Gasoline deliveries rose 1.5 percent in 1993, slightly more than the 1.1 percent increase in 1992. Fourth quarter deliveries rose a stronger 1.9 percent. However, most other indicators suggest that actual consumption growth may not have been any greater in 1993 than in the prior year.

First, economic growth, in the end, did not work out to anything much different from 1992's 2.6 percent, suggesting little change in the rate of growth of gasoline consumption. Second, current preliminary data on miles traveled showed a gain on the order of 2.5 percent for 1993, down half a point from the 3 percent rise in 1992. Although the correspondence between travel data and gasoline deliveries has never been perfect, this at least





does not suggest any stronger growth for gasoline consumption in 1993 versus 1992.

Finally, retail prices averaged only slightly lower than in 1992, and thus likely had little impact on consumption. Retail gasoline prices did end the year nearly 7 cents lower than a year earlier, even with October's 4.3 cent per gallon increase in the Federal tax rate and several state tax increases. But for the year as whole, the average price for unleaded regular fell only about 1.5 cents.

Shares by grade changed little in 1993 versus the prior year. Unleaded regular still held roughly two-thirds of the market, according to Department of Energy data, while premium remained at about 20 percent. Midgrade unleaded claimed 12 percent and leaded regular's shrinking share amounted to only 1 percent. In terms of oxygenated versus conventional gasoline, the former accounted for 16 percent of deliveries for the year as a whole and 27 percent—over 2 million B/D—in the fourth quarter.

(**Note:** 1992-93 deliveries comparisons here are based on 1992 data, as published by the Department of Energy, adjusted to be comparable with 1993 deliveries data, which are on a slightly higher basis. This is because 1993 data now include ethanol blending as well as a statistical adjustment to reconcile blending component data. Without re-casting 1992 data, the year-to-year growth for 1993 would be overstated).

Distillate Fuel Oil

HIGHWAY DIESEL STILL MAIN FACTOR IN DEMAND GROWTH.

Continued growth in on-high way diesel fuel consumption remained the largest factor driving the growth in distillate fuel oil for 1993. Distillate deliveries' 2.1 percent increase for the year was the second in a row, roughly matching that of the previous year. Fourth quarter deliveries rose 3.6 percent. Demand for on-highway diesel is estimated to have risen 3-4 percent in 1993, as this sector continued to gain market share in overall distillate fuel oil demand. But at least as conspicuous in 1993 as its market share, which has risen from 38 percent to nearly half of the distillate market in ten years, was the implementation of government requirements for low-sulfur diesel for this growing sector.

The rule entailed significant changes in logistics and storage in order to handle two grades of fuel instead of one, and refiners spent an estimated $3 billion in order to meet the new requirements. Although things got off to a bumpy start in October in some regions because of flood-related pipeline problems in the Midwest and a combination of refinery and other problems in California, high production levels at refineries of low-sulfur diesel helped to smooth out initial difficulties within a short period. Over the fourth quarter as a whole, low-sulfur diesel accounted for over 50 percent of total distillate fuel oil deliveries.

Railroad use is also estimated to have risen in 1993, with rail ton-miles increasing about 3 percent. Industrial, electric utility, water transportation, and off-highway uses also likely experienced increases, although their overall contribution to distillate's growth as a whole may not have been substantial.

Residential and commercial use changed little in 1993. An unusually cold first quarter put the year as a whole at about 5 percent colder than 1992 nationally. However, the effect on heating oil demand was perhaps only 10 thousand B/D or so, once averaged over the entire year.

Kerosine Jet Fuel

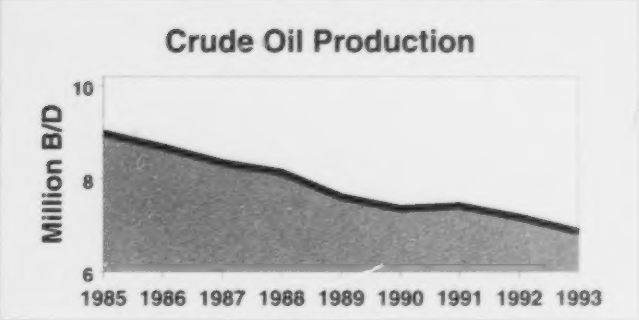
DELIVERIES RISE MORE THAN GROWTH IN AIR TRAFFIC.

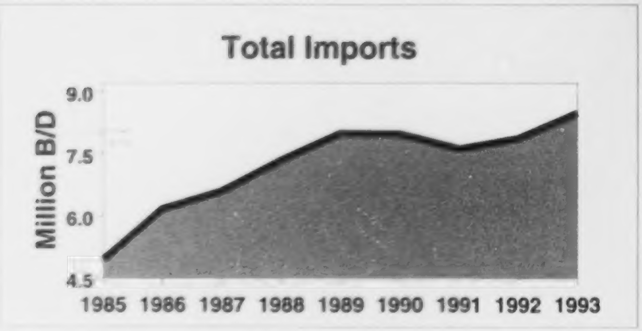
For 1993 as a whole, jet fuel deliveries increased 3.3 percent over 1992. After growing over 6 percent during the first half of the year, deliveries during the second half were slowed to a modest 4 percent. At 1.427 million B/D, deliveries for December increased only 1.2 percent compared to the same period a year ago.

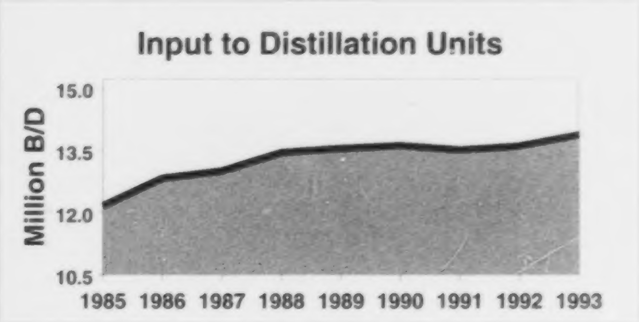
Despite the slower growth during November and December, deliveries of jet fuel exceeded indicators of underlying commercial consumption for the year as a whole. Based on estimates of the growth in air miles flown and air cargo ton miles, we estimate that the underlying growth in jet fuel use by U.S. airlines increased only 1-2 percent, or by approximately 20 thousand B/D. The balance of the increase in jet fuel deliveries can be attributed to increased liftings by the U.S. military due to the West Coast switch from jet-naphtha to jet-kerosine and by increased blending with diesel fuel.

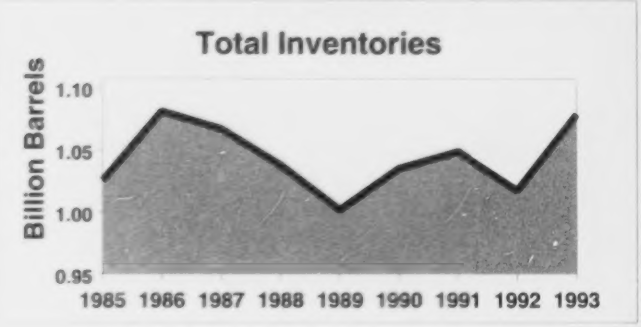
On October 1, U.S. bases on the West Coast were to switch from burning jet-naphtha to burning jet-kerosine. This increased fourth quarter deliveries to the military to approximately 140 thousand B/D, or by 80 percent compared to the same period of 1992. For 1993 as a whole, deliveries to the military averaged roughly 100 thousand B/D, an increase of nearly 40 percent over 1992.

It appears that 1993 provided more opportunities than 1992 for incremental blending into diesel fuel. Colder weather during the first quarter coupled with increased blending to satisfy the new low-sulfur requirements for on-road diesel fuel also helped to increase jet deliveries. Since some grades of jet fuel contain less


Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

than 0.05 percent sulfur by weight and as prices moved into parity with diesel fuel prior to October 1 and again during December, it is likely jet fuel deliveries were increased.

Residual Fuel Oil
DOWN FOR THE FIFTH YEAR IN A ROW.

For the fifth consecutive year, deliveries of residual fuel oil fell. At 1.025 million B/D, residual fuel oil deliveries declined 6.3 percent and were at their lowest level since 1941. Despite improved market conditions during the summer along with more competitive prices vis-a-vis natural gas during the second half of the year, the declining trend in resid deliveries was only tempered, rather than reversed.

Deliveries of residual fuel have tended to be more volatile than deliveries of other major refined products, primarily because of resid's role as a swing source of supply to electric utilities during periods of peak demand. During the third quarter of 1993, when electricity output increased by nearly 6 percent over the same period of 1992, resid deliveries also increased, rising about 14 percent. While this increase was due primarily to the extremely cool summer in 1992, it was not sufficient to offset the declines experienced during the first half. With the moderate winter temperatures in the Northeast during the fourth quarter, the need for electricity generation for space-heating purposes declined, which also furthered the decline in resid deliveries. We estimate that for the year as a whole, underlying resid consumption by electric utilities increased a slight 1-2 percent over 1992.

Although resid prices became more competitive with natural gas prices during the second half of the year, both fuels were supplanted in part by increased generation from nuclear power, coal, and hydroelectricity. In the Northeast, where approximately half of the area's net electricity output is sourced from nuclear power, electricity output generated from nuclear power is estimated to have increased approximately 16 percent over 1992. In Florida, where approximately 65 percent of all electricity output is generated from coal, coal-sourced generation is estimated to have increased 8-10 percent.

Other Oils
PREVIOUS GROWTH REVERSED IN 1993.

After increases of nearly 2 percent in 1991 and 4 percent in 1992, deliveries of "other oils" slipped in 1993. The 1.2 percent decline still left deliveries for this group about 2.5 percent higher than two years previously. Deliveries of many of the products in the "other oils" category, other than asphalt, fared less well in 1993 than in 1992 in terms of year-to-year growth.

The two largest contributors to the decline for "other oils" where liquefied petroleum gases, deliveries of which fell an estimated 3 percent following a 4 percent rise in 1992, and petroleum coke, which dropped roughly 5 percent from the prior year's unusually high levels. Deliveries of asphalt are estimated to have risen about 4 percent. As for petrochemicals, activity was modest in 1993. Although deliveries of ethane and gasoil-based petrochemical feedstocks rose moderately for the year, naphtha-based feedstock deliveries fell an estimated 15 percent.

SUPPLY

Production
OUTPUT FALLS.

For 1993 as a whole, total domestic crude oil production's decline accelerated to 4.3 percent, or more than 300 thousand B/D, from a 3.3 percent, 245 thousand B/D drop in 1992. Production for the year, at less than 6.9 million B/D, was at its lowest level since 1958, and down 29 percent from peak output of over 9.6 million B/D in 1970. However, the decline rate lessened by the fourth quarter to 2.6 percent, or 180 thousand B/D, because of several developments.

In Alaska, the coming onstream during October of GHX-2, a gas-handling facility on the North Slope, added production capability of about 50 thousand B/D at its current stage of completion. Start-up of the Point McIntyre field late in the year added another 80-100 thousand B/D to Alaskan production capability. As a result, year-to-year declines in Alaskan production shrank from nearly 9 percent or 400 thousand B/D in the first half of the year to only 2.3 percent in the fourth quarter. Year-end production there actually came close to matching that of a year ago. For the year, Alaskan production nevertheless dropped 7.5 percent or 130 thousand B/D.

In the lower 48, the first half's 250 thousand B/D, 4.5 percent drop moderated to about 140 thousand B/D, or 2.7 percent, by the fourth quarter. (Although the third quarter's decline was a lesser 90 thousand B/D, this was partly because of depressed production in the year-ago period due to the temporary effects of Hurricane Andrew on Gulf Coast operations.) Part of the moderation in the decline in the latter part of 1993 could be attributed to increased production at offshore California's Point Arguello. With resolution of permitting issues that had tied up production there for years, output rose from around 45 thousand B/D mid-year to 90 thousand B/D or so near year-end.

For the year as a whole, however, lower 48 production fell over 180 thousand B/D or 3.3 percent, slightly greater than 1992's 160 thousand B/D drop. At 5.3 million B/D, lower 48 output was nearly 45 percent less than the 9.4 million B/D produced in 1970 and at its lowest level since 1949. Given current rates of drilling and other upstream activity, the current rate of decline in the lower 48 appears to continue in the 150-200 thousand B/D range.

Drilling activity, though down 15 percent in the fourth quarter from above-trend levels a year ago, was still up 4 percent for the year on the strength of natural gas drilling. The most recent API drilling data show that while 1993's oil completions fell 8 percent, for their third annual decline in a row, gas completions rose 16 percent. Nevertheless, total wells drilled in 1993, at just under 25,000, were less than a third of the nearly 90,000 drilled in the peak year 1981.

In exploratory drilling, oil completions dropped 13 percent for the year to 435, continuing the decline of recent years, while exploratory gas completions reversed their prior dropoff with a rise of over 30 percent to 538. Total exploratory drilling, including dry holes, slipped 2 percent for the year. Exploratory oil and gas completions for 1993 were still far below the more than 2,500 drilled of each in 1981.

Imports

IMPORTS' SHARE REACHES NEARLY 50 PERCENT IN 1993.

Increasing for the second time in two years, total imports of crude oil and refined products during 1993 rose by 7.8 percent to 8.5 million B/D. Although roughly 40 percent of the 616 thousand B/D growth reflects a rebuilding of inventories after a net draw in 1992, the continued trends of declining crude production and rising, albeit barely, demand for refined products remain a major cause for growing imports. After adjusting for the change in stocks between 1992 and 1993, we estimate that the underlying growth in imports was about 4-5 percent, or roughly 360 thousand B/D.

The increase in total imports was the result of a 10.7 percent, 647 thousand B/D rise in crude imports that offset the nearly 1.7 percent, 31 thousand B/D decrease in total refined product imports. With gasoline and distillate imports falling 18 and 17 percent, respectively, they offset the 14 percent, 10 thousand B/D increase in jet-kerosine imports. Given the weak demand for residual fuel, imports of resid declined 5.3 percent between 1992 and 1993.

As a share of total domestic deliveries, the 1993 imports represented 49.5 percent of total domestic deliveries. This was a record high, surpassing the previous high of 47.7 percent in 1977. Although the import share has been rising since the end of the Persian Gulf War, the increasing amount of imports are being calculated on the basis of shrinking deliveries. Total deliveries for refined products declined steadily between from 17.3 million B/D in 1988 to 16.7 million B/D in 1991. At 17.2 million B/D, 1993 deliveries remain below the 1988 level.

Refinery Operations

UTILIZATION AVERAGES OVER 91 PERCENT.

Refinery activity, as measured by input to distillation units, rose by 2 percent in 1993, measurably stronger than the 0.7 percent increase in 1992 and its largest year-to-year gain in five years. Estimated refinery capacity, however, fell by about the same proportion as inputs rose. As a result, the utilization rate for U.S. refineries reached 91.5 percent, the highest level in at least twenty years. Fourth quarter inputs were also up by roughly the same percentage.

Output of major light products grew at the expense of heavier products in 1993. While residual fuel oil production dropped more than 7 percent, the year's gasoline output, including downstream blending of oxygenates, rose 2.7 percent. In the fourth quarter, reflecting the winter oxygenate season, production of oxygenated gasoline climbed to nearly 2.2 million B/D, or almost 30 percent of all output.

For distillate, the implementation of new low-sulfur requirements for on-highway diesel added to processing demand on refiners. Nevertheless, distillate production rose more than 5 percent for the year, and was up nearly 7 percent during the second half of 1993. Production of low-sulfur diesel rose from around 10 percent of output at the beginning of the year to more than half in the fourth quarter, or nearly 1.8 million B/D. Kerosine jet fuel production rose 4.5 percent for the year.

Capacity for additional processing beyond the initial distillation step has long been an important part of overall refining investment, and the role of downstream units has continued to grow. For 1993, according to Department of Energy data, downstream processing rose more or less in tandem with overall refinery activity. But over the longer term, the increasing demands on refiners to produce cleaner fuels, along with the declining quality of crude oil, has translated into a more-than-proportional increase in the intensity of processing. While basic distillation has risen about 3 percent, on net, over the past five years, feeds to cat crackers have risen 8 percent, hydro crackers, 13 percent, and coking units, 10 percent, all in an effort to increase yields of gasoline components and other light products.

Inventories

BOTH CRUDE AND PRODUCT STOCKS UP VERSUS A YEAR AGO.

With December's less-than-usual decline of 21 million barrels, total inventories ended the year 63 million barrels higher than for 1992. At 1.080 billion barrels, they were at their highest year-end level since 1986.

Crude stocks contributed 22 million barrels to the year-to-year increase. December's 3 million barrel rise put the year-end total at 341 million barrels, at the high end of the roughly 320-340 range experienced in recent Decembers.

Distillate stocks, too, were also at the high end of the recent-year range, at 145 million barrels. Although with the advent of the low-sulfur/high-sulfur split, the need for segregated storage has likely raised minimum operating inventories to some degree, year-end distillate stocks still appeared to be more than adequate. Excluding the East Coast, where highway diesel demand is proportionally smaller and heating oil demand higher, low-sulfur diesel accounted for 55 percent of distillate inventories. The East Coast's 30 percent figure pulled down the national average share for low-sulfur diesel inventories to about 45 percent.

Gasoline stocks, including blending components, rose 3 million barrels during December to 225 million barrels, up 9 million barrels from one year earlier. For finished gasoline, about 16 percent of the year-end stock levels of 183 million barrels consisted of oxygenated gasoline.

Twenty years after the Arab Oil Embargo

The year 1993 marks the twentieth anniversary of the oil embargo by members of the Organization of Arab Petroleum Exporting Countries against the U.S. and the Netherlands, an event which has come to be regarded as a watershed event in U.S. energy history. A brief look at the U.S. oil market now versus twenty years ago reveals the following:

Total energy consumption has grown only moderately. Although the U.S. economy has grown by nearly 60 percent over the past twenty years, energy consumption has grown only about 13 percent. Over the 1950s and 60s, growth in energy consumption had roughly matched that of the economy—about 3.5 percent per year. In recent years, the ties between economic growth and energy consumption have again become more apparent, though growth in energy consumption has still been slower than economic growth.

Total petroleum consumption has barely changed. Total U.S. petroleum consumption in 1993, at 17.2 million B/D, actually fell slightly short of 1973 consumption of 17.3 million B/D. Although substitution of other fuels (primarily coal and nuclear energy) accounts for part of this result, substantial conservation efforts played the largest role. Furthermore, the growth rate in consumption has fallen dramatically. Petroleum consumption had increased nearly 6 percent in 1973 compared with the prior year, following an increase of more than 7.5 percent in 1972. But for 1992 and 1993, petroleum's growth rate has averaged about 1 percent per year

The character of petroleum consumption has changed. Primarily because of the switch to other fuels by electric utilities, industry, and commercial buildings, deliveries of residual fuel oil plummeted by nearly 1.8 million B/D over the past twenty years to not much more than a third of their 1973 level. Meanwhile, the swelling of commercial air travel to 750 billion air-miles, nearly two-and-a-half times as large now as then, led to a more than 60 percent increase in kerosine jet fuel consumption.

Gasoline consumption, despite an increase in passenger car travel of roughly 50 percent, rose only about 12 percent. And for distillate fuel oil, although there was little net change in the total, end-use patterns changed dramatically. Heating oil usage fell by half due to both conservation and switching to other fuels, while highway diesel consumption, spurred by the demands of a growing economy and increasing use of diesel engines, doubled. Highway diesel's share has risen from about 20 percent of distillate fuel oil consumption to nearly half.

Domestic crude oil production has fallen. Over the past twenty years, crude oil production in the lower 48 has fallen over 40 percent—a drop of 3.7 million B/D from the 9.0 million B/D produced in 1973. New production in Alaska, beginning with the Prudhoe Bay field which came on stream in 1977, softened that decline, with production from that state rising from a few hundred thousand B/D to 1.6 million B/D last year. Nevertheless, on net, U.S. crude oil production has still fallen 2.3 million B/D or over 25 percent since the year of the embargo.

Imports have risen. Although petroleum demand in 1993 was, if anything, slightly less than in 1973, the fall in domestic supplies has led to higher imports. Over the twenty-year period, total petroleum imports have risen from 6.3 million B/D to 8.5 million B/D, an increase of 37 percent. Imports' share of domestic deliveries has risen from 36 percent to nearly 50 percent.

Petroleum refining has become more complex. Although crude runs, on net, have risen only about 10 percent in twenty years, the demands on refiners have changed dramatically. Demand for light products has increased relative to heavier products while crude oil has tended to get heavier and more sour. Additional product requirements such as for lead phasedown and for lower sulfur content have increased the amount of processing necessary per barrel processed.

The means for coping with supply disruptions has changed. For one, the U.S. now has nearly 600 million barrels of crude oil in the Strategic Petroleum Reserve, enough to replace 2 million B/D of imports for 10 months. Financial markets have also evolved to provide more flexibility in coping with price variation. And the petroleum price controls and allocation rules in effect in 1973, which had served to exacerbate the shortage and distort product markets of the day, are long gone.

	1973	**1993**	**Percent change**
Real Gross Domestic Product ($billions)	3.269	5.124e	56.8%
Energy consumption (quadrillion BTU)	74.3	84.0e	13.0%
Total petroleum deliveries	17.3	17.2	-0.8%
(million B/D)			
Motor gasoline	6.7	7.5	2.2%
Distillate	3.1	3.0	-1.6%
Kerosine jet fuel	0.8	1.4	60.7%
Residual fuel oil	2.8	1.0	-63.7%
Crude oil production	9.2	6.9	25.5%
Total imports	6.3	8.5	35.8%
Crude runs	12.4	13.6	9.5%

e: estimated

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	December			YEAR-TO-DATE		
	1993[2]	1992[3]	% Change	1993[4]	1992[3]	% Change
Disposition:						
Total motor gasoline	7,696	7,562	1.8	7,488	7,376	1.5
Finished oxygenated	2,080	na	na	1,191	na	na
Finished reformulated	0	na	na	0	na	na
Finished other	5,616	na	na	6,297	na	na
Naphtha-jet	84	143	(41.3)	115	144	(20.1)
Kerosine-jet	1,427	1,410	1.2	1,353	1,310	3.3
Distillate fuel oil	3,376	3,316	1.8	3,042	2,979	2.1
≤ 0.05 percent sulfur	1,766	na	na	778	na	na
> 0.05 percent sulfur	1,610	na	na	2,264	na	na
Residual fuel oil	1,022	1,312	(22.1)	1,025	1,094	(6.3)
All other oils (including crude losses)	4,384	4,495	(2.5)	4,311	4,365	(1.2)
Reclassified[5]	-195	-210	na	-171	-166	na
Total domestic products supplied	17,794	18,028	(1.3)	17,163	17,102	0.4
Exports	1,084	1,237	(12.4)	985	950	3.7
Total disposition	18,878	19,265	(2.0)	18,148	18,052	0.5
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,903	7,103	(2.8)	6,860	7,171	(4.3)
Natural gas liquids	1,740	1,744	(0.2)	1,745	1,697	2.8
Other supply[6]	1,171	1,142	2.5	1,220	1,220	0.0
Total domestic supply	9,814	9,989	(1.8)	9,825	10,088	(2.6)
Imports:						
Crude oil (excluding SPR imports)	6,722	5,937	13.2	6,720	6,073	10.7
From Canada	972	816	19.1	903	797	13.3
All other	5,750	5,121	12.3	5,817	5,276	10.3
Products	1,655	1,901	(12.9)	1,774	1,805	(1.7)
Residual fuel oil	391	481	(18.7)	355	375	(5.3)
All other	1,264	1,420	(11.0)	1,419	1,430	(0.8)
Total imports	8,377	7,838	6.9	8,494	7,878	7.8
Total supply	18,191	17,827	2.0	18,319	17,966	2.0
Stock change, all oils	-687	-1,438	na	+171	-86	na
Refinery Operations:						
Input to crude distillation units	13,882	13,400	3.6	13,867	13,600	2.0
Operable capacity	15,145	15,311	(1.1)	15,157	15,459	(2.0)
Refinery utilization[7]	91.7	87.5	na	91.5	88.0	na
Crude oil runs	13,617	13,194	3.2	13,613	13,411	1.5

	December 1993	November 1993	December 1992	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	340.6	338.1[R]	318.1	0.7	7.1
Unfinished oils	90.8	95.6	95.3	(5.0)	(4.7)
Total motor gasoline	224.8	221.4[R]	216.3	1.5	3.9
Finished oxygenated	29.7	29.5	na	0.7	na
Finished reformulated	0.0	0.0	na	na	na
Finished other	153.7	152.0[R]	na	1.1	na
Blending components	41.4	39.9	38.7	3.8	7.0
Naphtha-jet	2.6	2.9	4.4	(10.3)	(40.9)
Kerosine-jet	38.7	38.4	38.6	0.8	0.3
Distillate fuel oil	144.5	144.6	140.6	(0.1)	2.8
≤ 0.05 percent sulfur	63.2	62.7	na	0.8	na
> 0.05 percent sulfur	81.3	81.9	na	(0.7)	na
Residual fuel oil	46.3	45.4	42.6	2.0	8.7
All other oils	191.6	214.8[R]	161.4	(10.8)	18.7
Total all oils	1,079.9	1,101.2[R]	1,017.3	(1.9)	6.2

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. 2—Based on API estimated data converted to a monthly basis. 3—Source: U.S. Energy Information Administration (including any adjustments). 4—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). 5—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. 6—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. 7—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	4th Quarter 1993[3]	1992[2]	% Change
Disposition:			
Total motor gasoline	7,552	7,409	1.9
Finished oxygenated	2,062	na	na
Finished reformulated	0	na	na
Finished other	5,490	na	na
Naphtha-jet	85	142	(40.1)
Kerosine-jet	1,372	1,378	(0.4)
Distillate fuel oil	3,212	3,102	3.6
≤ 0.05 percent sulfur	1,657	na	na
> 0.05 percent sulfur	1,555	na	na
Residual fuel oil	979	1,156	(15.3)
All other oils (including crude losses)	4,454	4,544	(2.0)
Reclassified[4]	-182	-149	na
Total domestic products supplied	17,472	17,582	(0.6)
Exports	971	1,046	(7.2)
Total disposition	18,443	18,628	(1.0)
Supply:			
Domestic liquids production:			
Crude oil (including condensate)	6,903	7,085	(2.6)
Natural gas liquids	1,743	1,740	0.2
Other supply[5]	1,088	1,235	(11.9)
Total domestic supply	9,734	10,060	(3.2)
Imports:			
Crude oil (excluding SPR imports)	6,987	6,236	12.0
From Canada	971	787	23.4
All other	6,016	5,449	10.4
Products	1,768	1,821	(2.9)
Residual fuel oil	361	423	(14.7)
All other	1,407	1,398	0.6
Total imports	8,755	8,057	8.7
Total supply	18,489	18,117	2.1
Stock change, all oils	+46	-511	na
Refinery Operations:			
Input to crude distillation units	13,905	13,613	2.2
Operable capacity	15,158	15,301	(0.9)
Refinery utilization[6]	91.7	89.0	na
Crude oil runs	13,677	13,440	1.8

	4th Quarter 1993[3]	1992[2]	% Change
Stocks (at quarter-end, in millions of barrels):			
Crude oil (excluding SPR stocks)	340.6	318.1	7.1
Unfinished oils	90.8	95.3	(4.7)
Total motor gasoline	224.8	216.3	3.9
Finished oxygenated	29.7	na	na
Finished reformulated	0.	na	na
Finished other	153.7	na	na
Blending components	41.4	38.7	7.0
Naphtha-jet	2.6	4.4	(40.9)
Kerosine-jet	38.7	38.6	0.3
Distillate fuel oil	144.5	140.6	2.8
≤ 0.05 percent sulfur	63.2	na	na
> 0.05 percent sulfur	81.3	na	na
Residual fuel oil	46.3	42.6	8.7
All other oils	191.6	161.4	18.7
Total all oils	1,079.9	1,017.3	6.2

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American Petroleum Institute
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Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 1
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SUMMARY

Extraordinary cold helped push January's total deliveries up by a surprisingly large 11.7 percent—an increase of nearly 2 million B/D. This contrasted sharply with the existing underlying trend in consumption, with growth for all of last year amounting to less than one percent. Unusually warm weather a year ago had contributed to deliveries then being about half a million B/D below trend, serving to make this January's year-to-year increase even larger.

The greatest percentage increase in deliveries among the major products by far was for distillate fuel oil, which jumped more than 900 thousand B/D or roughly 30 percent from last January. Sub-zero temperatures in the latter part of the month, combined with colder weather for the month over all, put the Northeast at roughly 15 percent colder than normal. Compared with last January, the weather in the Northeast, where nearly 80 percent of U.S. heating oil consumption takes place, was nearly 35 percent colder. Strong demand from electric utilities short on natural gas and facing extremely high electricity demand boosted distillate consumption further. Even with the unusual cold and continued underlying consumption growth for highway and other uses, January's increase was surprisingly large. Estimated consumption increases account for at most half a million B/D of distillates' year-to-year change.

Residual fuel oil deliveries were also boosted by over 12 percent by heating and electric utility demand spurred by the cold weather. Kerosine jet fuel deliveries rose 8.4 percent, also partly because of strong demand for blending with distillate to improve cold-weather properties. Although inclement weather most likely hampered travel and moderated gasoline consumption, deliveries of that product rose a larger-than-usual 3.5 percent.

At refineries, inputs rose 2.9 percent and distillate production surged over 11 percent versus last January, as yields shifted towards products in greatest demand. And while total deliveries were rising strongly, imports for January declined 1.7 percent, year to year, with the difference largely made up from inventory. Out of the month's unusually large stock draw of 44 million barrels, more than half was distillate fuel oil. Following their 26 million barrel decline, month-end distillate stocks of 119 million barrels were still only slightly below the recent-year average for January because they had started the month at a higher than usual level.

Meanwhile, the Northridge earthquake shut down some West Coast crude oil pipelines for periods of a few days up to several weeks, but otherwise did not result in many serious problems for petroleum operations on the West Coast. Power outages and other temporary problems slowed operations at some refineries, though little serious damage was reported. As a precaution, offshore operations had been temporarily slowed or shut down as well.

PRODUCT SUPPLIED

Gasoline

DELIVERIES RISE MORE THAN LIKELY CONSUMPTION.

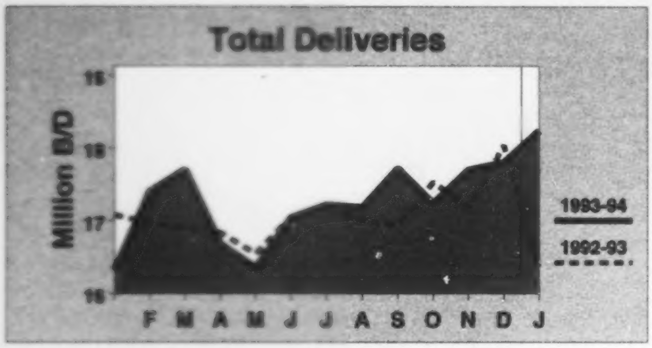
Gasoline deliveries for January increased an unexpected 3.5 percent versus the same month last year. Not only was this more than double last year's average growth rate of 1.5 percent, but the month's inclement weather compared with last January would have been expected to have put a damper on actual consumption during the month. Consumption growth of 1 to 1.5 percent would appear more plausible.

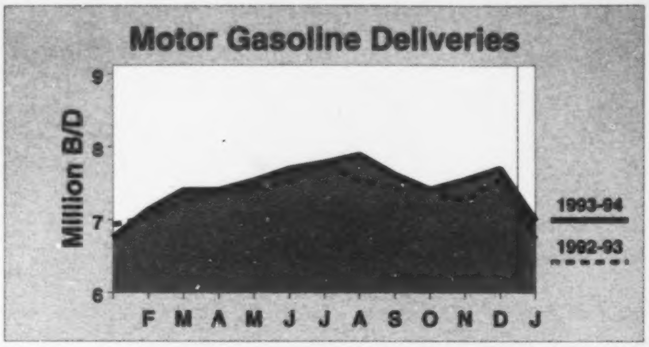
With winter oxygenate requirements covering more regions than last season, oxygenated gasoline deliveries rose by 25 percent to nearly 2.1 million B/D from 1.6 million last January. This put oxygenated gasoline's share at nearly 30 percent of deliveries for the month, up from about a quarter of deliveries a year ago. Meanwhile, Federal Highway Administration data continue to indicate strengthening in highway travel. November's 3.7 percent year-to-year increase was the largest so far for last year, though we estimate that the current trend is a slightly lesser 3 percent. With the impact of continued efficiency gains estimated at around 1.5 percent, this suggests that the trend in underlying consumption growth for gasoline has been running at around 1.5 percent in recent months.

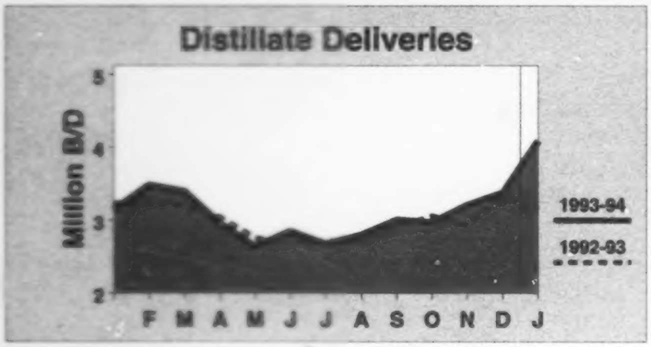
API ESTIMATES

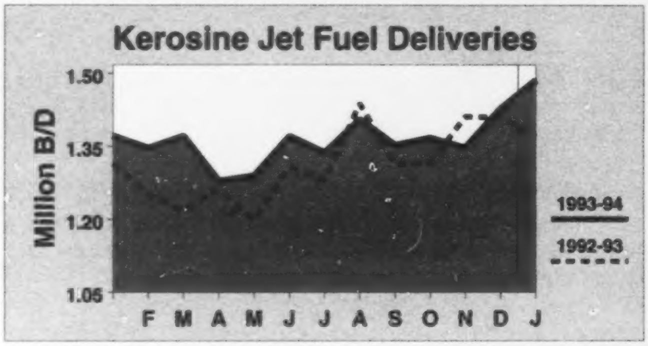
	JANUARY	
	Million B/D	Percent Change
Total domestic deliveries	18.2	11.7
Crude production	6.9	0.0
Total imports	7.8	(1.7)
Stocks (million bbl)	1,031	(0.5)

Published February 16, 1994









Distillate Fuel Oil

SEVERE COLD BOOSTS DEMAND.

Extremely cold weather in mid-month, with daily lows falling to sub-zero levels in many parts of the Northeast and Midwest, helped to push distillate deliveries to over 4 million B/D in January. This was an increase of roughly 30 percent, or 950 thousand B/D, over levels of a much milder January a year ago. Even after accounting for the direct and indirect effects of the cold, however, the year-to-year increase still appears larger than might have been expected.

In the Northeast, the month as a whole averaged roughly 15 percent colder than normal and 35 percent colder than last January. Heating degree days for the month nevertheless fell slightly short of those recorded during the unprecedented cold experienced in the region in December 1989.

As much as half a million B/D of distillate deliveries' increase could be attributed to increased consumption. In addition to a surge in heating oil demand, electric utilities experienced extremely heavy demand for electricity at a time when natural gas was often being diverted to residential customers, resulting in heavy usage of diesel-powered peaking units. The combined effect of strong heating demand and electricity utility consumption on the year-to-year comparison could easily have been as much as 400 thousand B/D. Another 100 thousand B/D can be attributed to ongoing growth in diesel demand. Although the inhospitable weather may have slowed truck and rail traffic, a greater need to keep diesel engines idling in very cold weather likely offset this.

Changes in tax collection procedures went into effect January 1, but provide little further explanation for January's unusually strong deliveries. It is possible that some distributors may have sought to minimize inventories of un-dyed tax-exempt fuel at the beginning of the month to avoid paying the floor tax. However, any major postponement of deliveries from December into January would have shown up in "unusually low" deliveries for December, which was not the case.

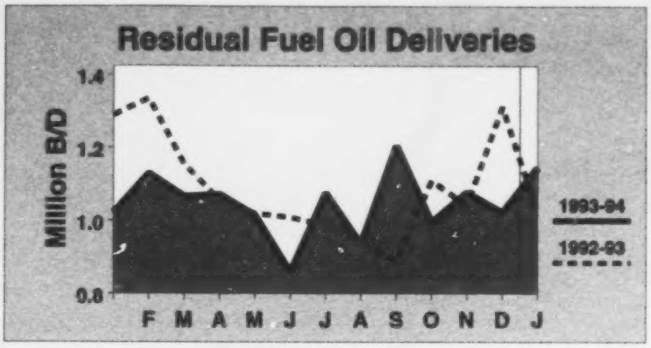
Kerosine Jet Fuel

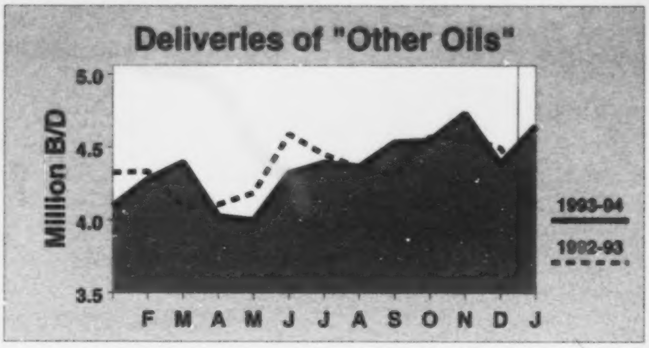
BLENDING, MILITARY SHIFT ADD TO DELIVERIES.

Deliveries of kerosine jet fuel during January increased by 115 thousand B/D, or 8.4 percent, over the same period of 1993. Aside from the 1.54 million B/D peak in December 1989, this month's deliveries were at an all-time high. While growth in deliveries surpassed the estimated growth in miles flown on commercial airlines, increased incremental blending with diesel fuel and military deliveries are believed to be largely responsible for this month's year-to-year growth.

Because this January's extreme cold affected such a large portion of the country and was so severe, the need for blending jet-kerosine into diesel was increased. With winter's colder temperatures, such as the sub-zero temperatures that were experienced during the height of the cold snap, diesel fuel can begin to cloud, or crystallize. Once the diesel fuel starts to crystallize, starting problems and stalling can occur. In order to prevent these problems, kerosine or jet-kerosine is blended into the diesel. Based on historical data, we estimate that approximately 150-200 thousand B/D of jet fuel deliveries can be diverted to blending during a typical January. However, if the weather conditions are more severe, as was the case during this January, the amount of jet-kerosine for blending is believed to increase.

The severe cold and ice resulted in several airport closings and caused some airlines to cancel as much as 5 percent of their scheduled flights. Nonetheless, preliminary estimates of miles flown by commercial airlines during January showed only a slight 1 percent decline compared to a year ago. In addition, air cargo miles, of which approximately half are independent of passenger traffic, increased by 5-6 percent between this January and last.





Based on these indicators, it appears that commercial airline consumption, and thus jet fuel deliveries, remained relatively flat with the same period a year ago.

Deliveries to the military also continued to increase. Preliminary data from the Defense Fuel Supply Center indicated deliveries of jet fuel to the military averaged 126 thousand B/D during December. This represented a year-to-year increase of nearly 70 percent, or approximately 50 thousand B/D and is a reasonable estimate of the increased military use in January.

Residual Fuel Oil

HEAVY ELECTRICAL DEMAND REVERSES RESID'S DECLINE. January deliveries of residual fuel oil increased by 12.4 percent, or 126 thousand B/D, year-to-year. With the month's colder-than normal temperatures, the demand for electricity output for heating needs rose which helped boost resid deliveries. The price of resid continued to maintain a price advantage vis-a-vis natural gas, and may have encouraged incremental purchases by both electric utilities and industrial users.

In the three areas of the country that use resid intensively, the extremely cold weather resulted in significant increases in the demand for electricity output. Electricity generation in New England and the Mid-Atlantic showed increases of 8.9 and 11.7 percent, respectively, between this January and last. In Florida, where the number of heating degree days more than doubled between this January and that of a year ago, electricity output is estimated to have increased by 14-16 percent. Also encouraging resid consumption by electric utilities were the natural gas curtailments in the Northeast. Because colder weather increases residential and commercial demand for heating, natural gas deliveries to electric utilities and industrial users may be interrupted. Under these conditions, it is not unusual for electric utilities to significantly increase resid-burn. Since January's cold snap was nearly as severe as the one in December 1989, electric utilities could have increased resid-fired generation by at least 100 thousand B/D.

For the month, resid prices were significantly lower than the city gate price of natural gas in several Atlantic seaboard markets. In Boston and New York, for example, city gate prices of natural gas exceeded $3.00 per million BTU during the course of the month compared to peak resid prices of $2.58 and $2.87 per million BTU, respectively. Given resid's strong price advantage and the natural gas curtailments that occurred during January, it is likely that both electric utilities and industrial users chose to increase their incremental purchases of resid.

Other Oils

DELIVERIES JUMP. Deliveries of "other oils" rose a substantial 13.4 percent over last January. Colder weather this year than last no doubt contributed at least a portion of the sizable increase in the form of strong demand for LPGs for heating use. Also partly responsible were deliveries of "other oils" last year below trend by perhaps 200-300 thousand B/D. Even had year-ago deliveries been more in line with the then-existing trend, deliveries this year would still have risen 6 to 8 percent.

SUPPLY

Production

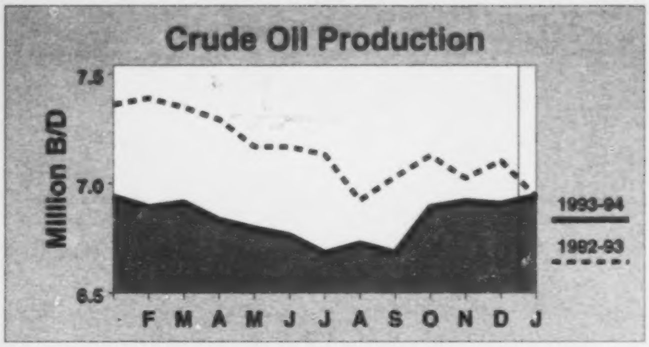
CRUDE OIL OUTPUT FLAT VERSUS LAST JANUARY. Domestic crude oil production was flat in January—the first month without a year-to-year decline in more than two years. Alaskan production rose for the first time since late 1991, increasing 1.5 percent versus last January. Production's decline there has been slowed, at least temporarily, since October, when the latest gas-handling installation came onstream on the North Slope and Point McIntyre production began. Previously, Alaskan output had been declining at an average of about 100 thousand B/D per year.

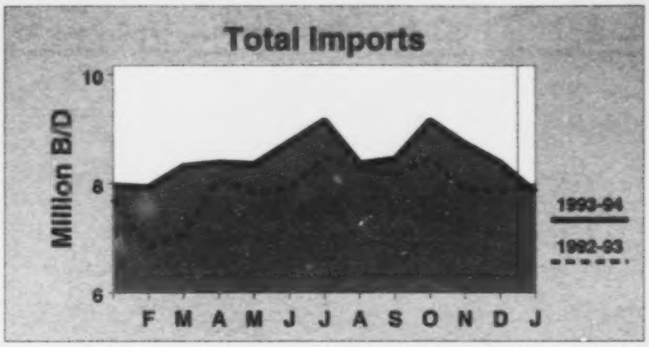
In the lower 48, production declined only about half a percent or 20 thousand B/D from last January. Following the Northridge earthquake, offshore production was temporarily slowed or shut in, but this did not have a serious effect on overall monthly production. Several crude oil pipelines suffered light to moderate damage, causing shutdowns of anywhere from a few days to several weeks.

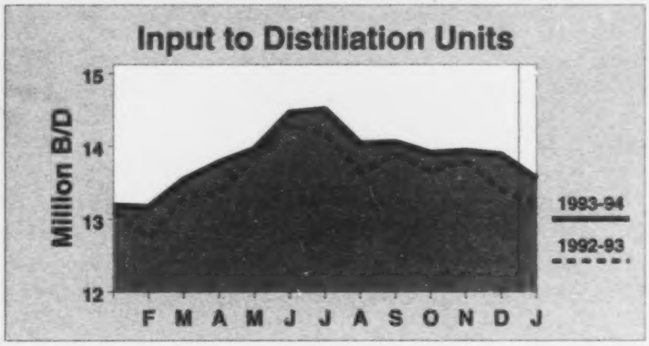
Imports

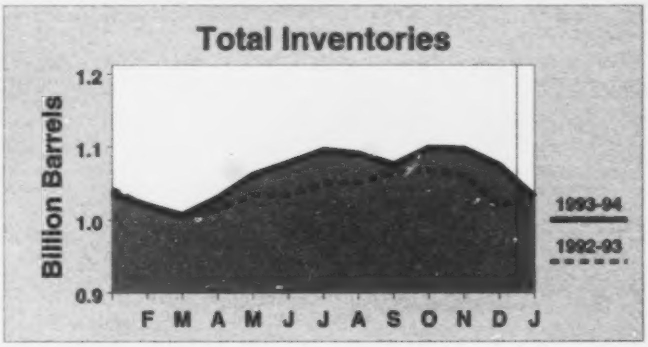
JANUARY'S DECLINE EVADES THE TREND. After experiencing robust year-to-year increases during November and December, January imports of crude oil and refined products declined by 133 thousand B/D, or by 1.7 percent compared to a year ago. Although this seems to be an apparent contradiction given that refined product demand surged nearly 12 percent and domestic production did not increase at all between this January and a year ago, increased demand can also be met in other ways, such as drawing on inventories. For the month, inventories were drawn down by 1.4 million B/D which is in contrast to the inventory build of 615 thousand B/D during last year's mild January.

The year-to-year decline in total imports reflects the volatilility of imports that can often make deciphering the underlying trend in


Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

consumption difficult. However, with the month's increase in demand continuing on the upward trend of previous months while domestic production declines, the need for imports has not diminished. Given these trends and that large inventory draws, such as the one experienced this month can also be replenished with increased imports, it is likely that this month's decline in imports was more of a deviation from trend than a reversal.

In contrast to prior months in which increased crude oil imports offset declines in refined product imports, January's increase in refined products were not adequate to offset the decline in crude imports. Crude oil imports were off by 235 thousand B/D while product imports increased by 102 thousand B/D. All major refined product imports showed declines compared to their year-ago levels. At 173 thousand B/D, distillate imports were down approximately 5 percent from their year-ago levels. However, reflecting the seasonal increase for heating oil, imports of distillates were up 31 percent, or 41 thousand B/D, over December's level because of strengthening imports at month-end.

Refinery Operations

DISTILLATE OUTPUT SURGES MORE THAN 11 PERCENT.

Refinery input rose 2.9 percent over last January's level, but a shift in yield patterns resulted in a more than 11 percent year-to-year increase in distillate fuel oil production. Output of kerosine jet fuel, also in demand for blending as a result of the weather, increased over 7 percent. Gasoline output slipped 1.4 percent, and residual fuel oil output fell 2.7 percent. Utilization of capacity amounted to 89.5 percent, up from last January's 87.0 percent.

With highway transport demand typically slowing in mid-winter, low-sulfur diesel production slowed as well from the strong levels of recent prior months. It slipped from nearly 1.8 million B/D in December to just over 1.5 million B/D in January. Output of high-sulfur distillate, including heating oil, rose slightly from December's levels to 1.7 million B/D.

Inventories

TOTAL STOCKS DROP MORE THAN 40 MILLION BARRELS.

Total stocks fell an unusually large 44 million barrels during January compared with the end of December. Although declines are not uncommon in January, the average change for the month in the past five years has been an increase of roughly 10 million barrels.

More than half of the month's decline was in distillate stocks, which fell a substantial 26 million barrels to 119 million barrels. This was three times the average drawdown for January and the largest drop for that month in more than ten years. However, distillate stocks had started the month at 145 million barrels, their highest level for a similar point since 1986. Thus, though month-end distillate stocks of 119 million barrels were 11 million barrels lower than a year ago, they were only slightly below the recent-year average of 121 million barrels.

With lower crude imports and strong refinery runs, crude stocks fell 7 million barrels to a more-or-less typical 333 million barrels. Gasoline stocks rose 8 million barrels, somewhat less than average for January. Gasoline inventory building in January, which has occurred in eight of the ten past years, results mainly from weak seasonal demand. Gasoline stocks have typically declined again in March and April as demand picks up.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	January			YEAR-TO-DATE		
	1994[2]	1993[3]	% Change	1994[4]	1993[3]	% Change
Disposition:						
Total motor gasoline	6,985	6,746	3.5			
Finished oxygenated	2,062	1,645[E]	25.4			
Finished reformulated	0	na	na			
Finished other	4,923	5,101[E]	(3.5)			
Naphtha-jet	80	93	(14.0)			
Kerosine-jet	1,486	1,371	8.4			
Distillate fuel oil	4,088	3,140	30.2			
≤ 0.05 percent sulfur	1,869	328[E]	469.8			
> 0.05 percent sulfur	2,219	2,812[E]	(21.1)			
Residual fuel oil	1,146	1,020	12.4			
All other oils (including crude losses)	4,644	4,094	13.4			
Reclassified[5]	-202	-144	na			
Total domestic products supplied	18,227	16,320	11.7			
Exports	895	1,135	(21.2)			
Total disposition	19,122	17,455	9.6			
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,940	6,937	0.0			
Natural gas liquids	1,765	1,728	2.1			
Other supply[6]	1,167	1,441	(19.0)			
Total domestic supply	9,872	10,106	(2.3)			
Imports:						
Crude oil (excluding SPR imports)	6,057	6,292	(3.7)			
From Canada	894	778	14.9			
All other	5,163	5,514	(6.4)			
Products	1,774	1,672	6.1			
Residual fuel oil	375	383	(2.1)			
All other	1,399	1,289	8.5			
Total imports	7,831	7,964	(1.7)			
Total supply	17,703	18,070	(2.0)			
Stock change, all oils	-1,419	+615	na			
Refinery Operations:						
Input to crude distillation units	13,551	13,176	2.9			
Operable capacity	15,145	15,143	0.0			
Refinery utilization[7]	89.5	87.0	na			
Crude oil runs	13,269	12,980	2.2			

	January 1994	December 1993	January 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	333.4	340.5	325.6	(2.1)	2.4
Unfinished oils	99.9	90.8	99.3	10.0	0.6
Total motor gasoline	233.2	224.9[R]	236.6	3.7	(1.4)
Finished oxygenated	27.8	29.7	32.3	(6.4)	(13.9)
Finished reformulated	0.0	0.0	na	na	na
Finished other	162.6	153.8[R]	163.0	5.7	(0.3)
Blending components	42.8	41.4	41.3	3.4	3.6
Naphtha-jet	2.5	2.6	4.8	(3.9)	(47.9)
Kerosine-jet	38.0	38.7	36.3	(1.8)	4.7
Distillate fuel oil	118.6	144.5	130.2	(17.9)	(8.9)
≤ 0.05 percent sulfur	52.9	63.2	22.1	(16.3)	139.4
> 0.05 percent sulfur	65.7	81.3	108.1	(19.2)	(39.2)
Residual fuel oil	44.2	46.3	44.2	(4.5)	0.0
All other oils	160.9	186.3[R]	159.1	(13.6)	1.1
Total all oils	1,030.7	1,074.6[R]	1,036.1	(4.1)	(0.5)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. 2—Based on API estimated data converted to a monthly basis. 3—Source: U.S. Energy Information Administration (including any adjustments). 4—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). 5—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. 6—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. 7—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". R—Revised. E—Estimated.

A2575-2

American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 2
FEBRUARY 1994

SUMMARY

To an incurable pessimist, the moderation in the growth of total deliveries from nearly 12 percent, year to year, in January to over 5 percent for February might be taken as a serious setback. But by any other measure, February's growth in deliveries was still unusually strong.

All major products shared in the pattern of unusually large year-to-year increases. Gasoline deliveries rose a solid 3.2 percent, contrasting with growth for all of last year of only about 1.5 percent. Distillate and kerosine jet fuel deliveries continued strong as well, both rising by 10.0 percent, after substantial weather-related increases in January. Even residual fuel oil deliveries jumped nearly 18 percent, their fourth year-to-year increase in a row.

Although we believe the trend in underlying consumption growth has not been nearly so strong as that portrayed by the past two months' deliveries data, the strengthening economy has likely bolstered actual consumption to some degree. The trend in growth of total petroleum consumption, which rose only half a percent or so for last year as a whole, may more recently have been closer to 2 to 3 percent rate once unusual weather and other anomalies are taken into account.

Domestic crude oil production fell 115 thousand B/D, or 1.7 percent for February. Alaskan output declined only 2.1 percent, or about 35 thousand B/D, following January's modest increase, which had been the first year-to-year increase in a little over two years. In the lower 48, crude oil production slipped about 80 thousand B/D or 1.5 percent versus one year earlier.

Total imports rose a moderate 3.0 percent in February—with the gap between domestic supply and consumption filled in part by continued substantial inventory draws. February's 35 million barrel stock draw, nearly three times the average amount for the month, temporarily displaced more than a million B/D of imports. As a result of the draw, month-end total inventories stood at 980 million barrels, the lowest level for the month in twenty years.

At refineries, with continued strong deliveries of distillate fuel oil, output of this product rose over 14 percent from a year ago to its highest February level in seventeen years. Strong blending demand for kerosine jet fuel continued into February as well, resulting in a three-year February high of 1.4 million B/D for production of that product. Overall refinery activity, as measured by input to distillation units, was up 1.9 percent from last February.

PRODUCT SUPPLIED

Gasoline

STRENGTHENING ECONOMY ADDS TO INCREASED USAGE.

Growth in gasoline deliveries continued at a relatively strong pace in February, rising 3.2 percent from the same month one year earlier. Although this is still greater than likely growth in actual consumption, recent strengthening in the economic climate may have nevertheless been adding to underlying consumption growth to some degree. With quarter-to-quarter GDP growth at the end of last year currently estimated at an annual rate of 7.5 percent, the economy so far in 1994 could have easily been ahead by 4 percent or so versus a year ago—a percent or so ahead of last year's average economic growth of 3 percent.

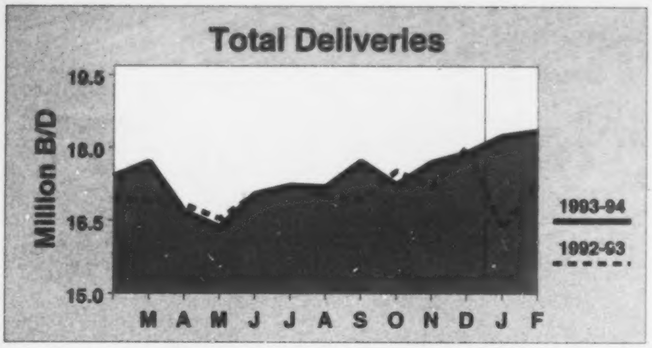
Furthermore, data on travel could also be interpreted as showing stronger growth in recent months than might be apparent from year-to-year comparisons alone. While the latest data available show that highway miles traveled during the fourth quarter averaged about 3 percent ahead of a year ago, on a seasonally-adjusted basis they suggest that since the middle of last year, growth may have been proceeding month to month at a 4 to 5 percent annualized rate. If this trend has continued into early 1994, year-to-year growth in travel of 4 percent or more may have occurred so far this year, even with the inclement weather. If this has in fact been the case, it implies a trend in underlying growth of gasoline consumption of 2 to 2.5 percent. This contrasts with 1993's annual increase in gasoline deliveries of about 1.5 percent.

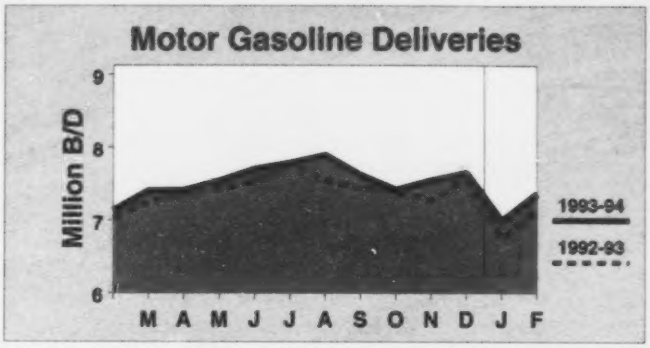
As for oxygenated gasoline, deliveries of this product jumped more than 55 percent from year ago levels, reflecting in part the more widespread requirements this season than last. Deliveries of oxygenated gasoline amounted to 1.9 million B/D in February.

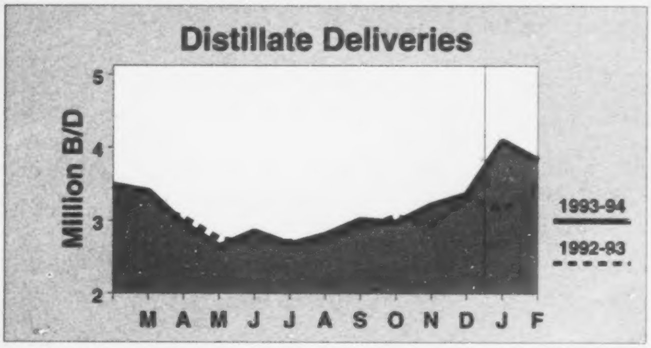
API ESTIMATES

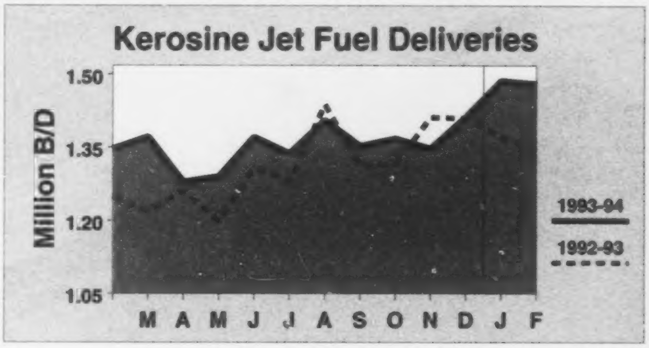
	FEBRUARY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	18.3	5.4	18.3	8.6
Crude production	6.8	(1.7)	6.9	(1.1)
Total imports	8.2	3.0	8.0	0.5
Stocks (million bbl)	980	(3.9)	na	na

Published March 16, 1994


Total Deliveries


Motor Gasoline Deliveries


Distillate Deliveries


Kerosine Jet Fuel Deliveries

Distillate Fuel Oil

GROWTH STILL STRONG IN FEBRUARY.

Deliveries of distillate fuel oil rose 10 percent in February versus a year ago—substantially less than the estimated 30 percent gain for January, but unusually strong nonetheless. Cold weather early in the month, combined with a probable need to restock wholesale and end-user inventories after January's severe cold, likely played a role in boosting February's deliveries.

The unusually cold weather that had beset the East in January continued into early February. Heating degree days in the Northeast for the first half of February averaged roughly 15 percent colder than normal and about the same amount against the year-ago period. But with the weather moderating significantly by the end of the month, February as a whole averaged about the same as last February both for the Northeast and for the nation as a whole.

The strengthening economy has likely added to growth for diesel fuels. The growth trend in highway freight demand, as best as can be estimated, has likely been running at an estimated 3 or 4 percent, and rail traffic for the month was up an estimated 5 percent. Growth in these and the remaining sectors suggest underlying growth in distillate fuel oil consumption on the order of 2 to 3 percent.

Deliveries of low-sulfur diesel amounted to over 1.7 million barrels per day during February, or 45 percent of total distillate deliveries.

Kerosine Jet Fuel

DELIVERIES JUMP 10 PERCENT.

Deliveries of kerosine-jet fuel during February were at an all-time high for the month, averaging 1.48 million B/D. This was an increase of 134 thousand B/D, or 10 percent over last February. The strong gains in January combined with February's strong performance boosted the year-to-date growth to 9.1 percent. Given the winter snowstorms earlier in the month that caused several airports to close and airlines to cancel flights, the strength of February's deliveries is also believed to be the result of continued blending with diesel fuel and increased military liftings.

As was the case in January, cold temperatures in the Northeast and Midwest continued the need for blending jet-kerosine into diesel fuel to prevent the fuel from clouding, or forming crystals, which can lead to starting and stalling problems in diesel engines. The amount of jet-kerosine fuel required for blending purposes likely increased this February relative to last, thus contributing to the increase in deliveries.

Preliminary traffic reports from commercial airlines indicated that February's harsh weather had a significant impact on air travel. Based on these reports, we estimate that total miles flown declined by approximately 3-5 percent during February compared to a year ago. With respect to cargo traffic, it appears that the weather also limited activity in this segment, keeping growth in cargo ton miles at 2-3 percent. With limited commercial activity, we estimate that jet fuel consumption by commercial airlines declined a slight 1-2 percent between this February and last.

Military liftings of jet-kerosine continued to increase. Preliminary data from the Defense Fuel Supply Center for January indicated a year-to-year increase of 58 percent to 99 thousand B/D. Based on revised figures for December and the preliminary January data, we estimate that military liftings during February were in the range of 95-100 thousand B/D.

Residual Fuel Oil

FOURTH YEAR-TO-YEAR GAIN IN A ROW.

Following on January's strong performance, February deliveries of residual fuel increased by 17.6 percent, year-to-year, to 1.3 million B/D. This was the fourth consecutive year-to-year increase in resid deliveries, and after combining February's strong showing with January's robust growth, the resulting year-to-date increase was a substantial 15 percent.

Continuing cold temperatures and snowstorms in the early part of the month coupled with the need to replenish depleted end-user stocks held by electric utilities and industrial users were probably the main factors contributing to February's growth in resid deliveries. With the harsh weather persisting, electric utilities and industrial users may have been prompted to continue using resid to meet the increased demand for electricity output. In addition, with resid stocks held by these users already at low levels due to January's severe cold, it is likely that fuel buyers may have taken advantage of lower resid prices and increased their incremental purchases for inventory.

In the key Eastern markets of Boston and New York, resid remained a strong alternative to natural gas during February as city gate prices of natural gas (the price paid by utilities for natural gas) went as high as $4.00 per million BTU. Although city gate prices eventually dropped to approximately $3.00 per million BTU by month's end, resid prices hovered at $3.00 per million BTU for much of the month before dipping to $2.80 per million BTU. In Florida, another key market for resid, February resid prices at Jacksonville averaged $2.12 per million BTU compared to the natural gas city gate price of $3.07 per million BTU.

With respect to the industrial sector, which accounts for nearly 13 percent of resid demand on an annual basis, the most recent government statistics continue to indicate increasing strength. During January, the index of industrial production rose 4.7 percent, slightly stronger than the 1993 fourth quarter increase of 4.2 percent.

Other Oils

UP 4 PERCENT FOR THE MONTH.

Growth in deliveries of "other oils" was not as strong in February as January's 13 percent increase. Nevertheless, February's deliveries for this group of products still rose 4 percent, in part reflecting the effects of cold weather on demand for liquefied petroleum gases. Results for last year as a whole had shown a modest net decline.

The largest single contributor to last year's 0.8 percent deliveries drop, according to recently-released full-year data for 1993 from the Department of Energy, was liquefied petroleum gases' 2.4 percent decline. Deliveries of petroleum coke, subsiding about 5 percent after an unusual surge the prior year, also contributed to the decrease. As for petrochemical feedstocks, deliveries of ethane and gasoil each rose roughly 3 percent, or about 25 thousand B/D in total, but this was nearly offset by a 10 percent, 20 thousand B/D drop for deliveries of naphtha-based feedstocks. Asphalt deliveries gained close to 5 percent to nearly match the all-time high set in 1990.

SUPPLY

Production

OUTPUT FALLS 1.7 PERCENT.

Domestic crude oil production fell 115 thousand B/D, or 1.7 percent for February. Alaskan output declined 2.1 percent, or about 35 thousand B/D, following January's modest increase, which had been the first year-to-year rise in a little over two years. In the lower 48, crude oil production slipped about 80 thousand B/D or 1.5 percent versus one year earlier.

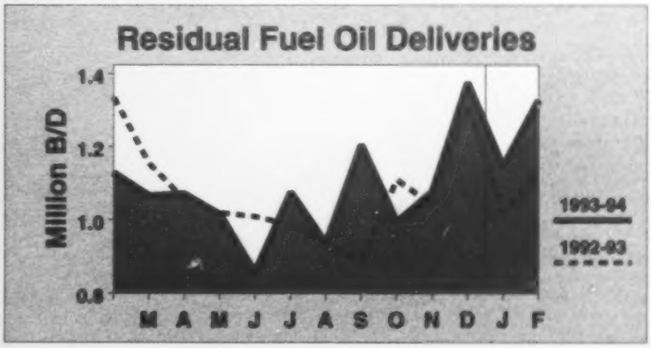
According to recent data published by the Association of Oilwell Servicing Contractors, the servicing of existing oil and gas wells actually increased in 1993, by 13 percent to nearly 3,160 rigs active. As with the drilling of new wells, gas activity more than oil activity was responsible for the increase. Despite the increase over 1992 levels, last year's average still fell short of levels two years ago.

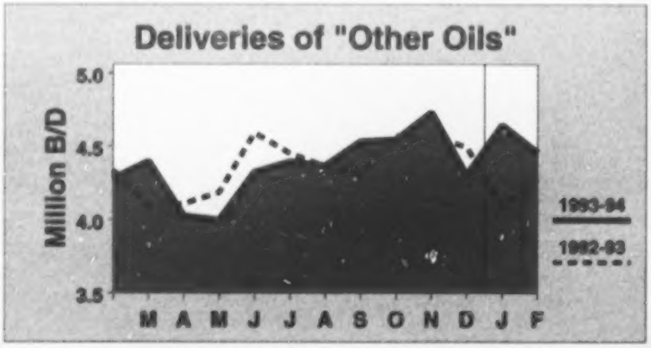
Imports

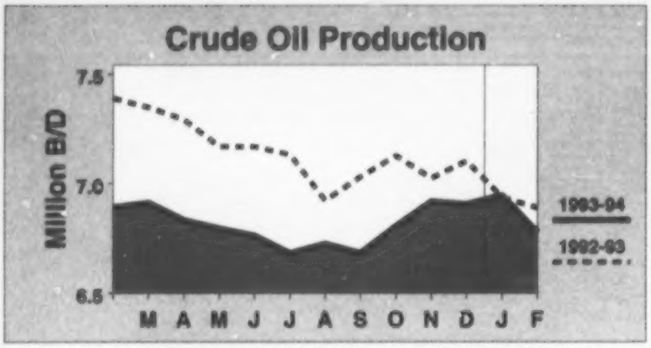
MODEST RISE, DESPITE STRONG DELIVERIES.

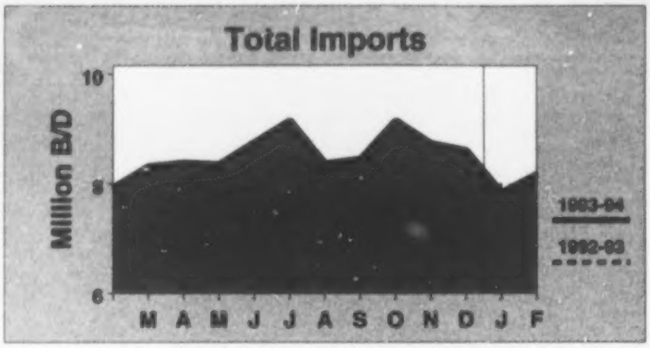
Although February total imports of crude oil and refined products returned to its pattern of growth, the 237 thousand B/D, 3.0 percent increase was more modest than what would be implied by the continuing divergence between domestic supply and demand. However, with the 1.3 million B/D draw in inventories during February substantially filling the gap, the year-to-year growth in imports was constrained. Given that domestic crude production continues to trend downward while consumption of refined products trends upward, the need for imports does not appear to be diminishing.

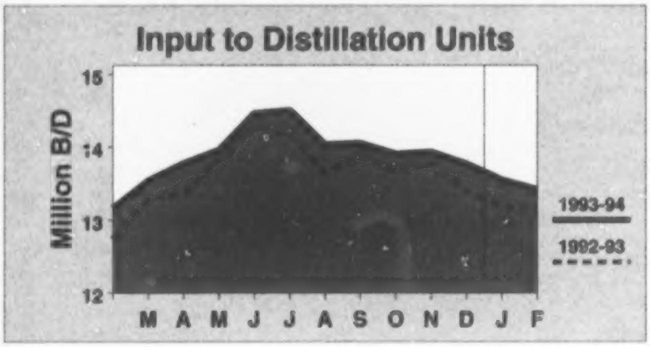
During February, imports of refined products jumped nearly 13 percent year-to-year while crude oil imports remained flat. Imports of residual fuel oil, which had not surpassed the 500 thousand B/D level since December 1991, had the largest year-to- year gain, increasing by 183 thousand B/D during February to 508 thousand B/D. Distillate imports increased by nearly 28 percent from their year-ago levels to 286 thousand B/D. Imports of motor gasoline at 291 thousand B/D increased by nearly 35 percent from their year-ago level.

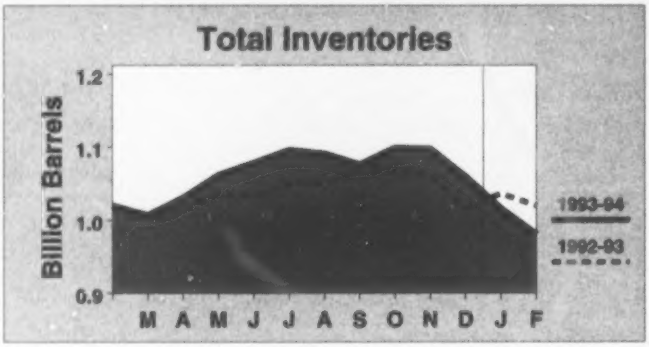





Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

Refinery Operations

DISTILLATE OUTPUT CONTINUES TO SURGE. With strong deliveries of distillate fuel oil continuing in February, output of this product continued at high levels as well. The month's distillate fuel oil output rose more than 13 percent from a year ago to nearly 3.2 million B/D, its highest February level in seventeen years. Low sulfur diesel accounted for 47 percent of refinery distillate output, or about 1.5 million B/D. Strong blending demand for kerosine jet fuel continued into February as well, resulting in a three-year February high for production of that product. February's kerosine jet fuel output rose 4.0 percent to nearly 1.4 million B/D.

Although gasoline output as a whole slipped 3.5 percent from a year ago, oxygenated fuel production was up over 25 percent, to 1.6 million B/D, in order to meet greater requirements this season compared with last. Residual fuel production fell 3.4 percent.

The gain for overall refinery activity was less dramatic than for individual products such as distillate and kerosine jet fuel. Input to distillation units rose 1.9 percent from last February, and utilization averaged 88.6 percent for the month. This was up close to two points from last February's 86.9 percent.

Inventories

35 MILLION BARREL DRAWDOWN NEARLY TRIPLES THE AVERAGE. In February, total stocks fell substantially for the second month in a row. The 35 million barrel drop was nearly three times the average stock draw for the month. As a result of the past two months' drawdown, month-end inventories fell from 1.03 billion at the end of December, their highest December level in six years, to 980 million barrels at the end of February, the lowest for the month in twenty years.

Declines for crude oil and most major products contributed to the drop. Crude oil inventories fell 3 million barrels to 331 million barrels, a level roughly 5 million barrels below average for the month. Distillate stocks fell at only about half the unusually large rate of January. Their February drop of 14 million barrels was more or less in line with typical experience for the month. Unlike January's decline, of which high-sulfur stocks accounted for the largest share, February's was nearly evenly split between high and low sulfur diesel. At 104 million barrels, month-end distillate stocks were down slightly from typical levels.

With refineries concentrating on distillate and kerosine jet fuel production, gasoline inventories slipped 6 million barrels to 227 million barrels, about 10 million barrels below average for February. However, mid-winter stocks of gasoline are often the highest of the year because of seasonally weaker demand. Thus, February's gasoline stock levels were still the second highest month-end level in nearly a year. With the end of the oxygenate season nearing, stocks of oxygenated gasoline declined 10 million barrels to 17 million barrels, 5 million barrels lower than a year ago. Last year, stocks of oxygenated gasoline fell to a low of 6 million barrels by mid-year before building again in anticipation of the coming oxygenate season.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	February			Year-to-Date		
	1994[2]	1993[3]	% Change	1994[4]	1993[3]	% Change
Disposition:						
Total motor gasoline	7,357	7,129	3.2	7,162	6,928	3.4
Finished oxygenated	1,903	1,223[E]	55.6	1,987	1,445[E]	37.5
Finished reformulated	0	na	na	0	na	na
Finished other	5,454	5,906[E]	(7.7)	5,175	5,483[E]	(5.6)
Naphtha-jet	69	143	(51.8)	75	117	(35.9)
Kerosine-jet	1,480	1,346	10.0	1,483	1,359	9.1
Distillate fuel oil	3,827	3,479	10.0	3,964	3,301	20.1
≤ 0.05 percent sulfur	1,733	491[E]	253.0	1,804	405[E]	345.4
> 0.05 percent sulfur	2,094	2,988[E]	(29.9)	2,160	2,896[E]	(25.4)
Residual fuel oil	1,327	1,128	17.6	1,232	1,071	15.0
All other oils (including crude losses)	4,459	4,277	4.3	4,556	4,180	9.0
Reclassified[5]	-179	-103	na	-191	-125	na
Total domestic products supplied	18,340	17,399	5.4	18,281	16,831	8.6
Exports	885	1,033	(14.3)	890	1,087	(18.1)
Total disposition	19,225	18,432	4.3	19,171	17,918	7.0
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,775	6,890	(1.7)	6,864	6,941	(1.1)
Natural gas liquids	1,767	1,761	0.3	1,766	1,744	1.3
Other supply[6]	1,246	1,252	(0.5)	1,202	1,325	(9.3)
Total domestic supply	9,788	9,903	(1.2)	9,832	10,010	(1.8)
Imports:						
Crude oil (excluding SPR imports)	6,167	6,156	0.2	6,109	6,227	(1.9)
From Canada	934	782	19.4	913	780	17.1
All other	5,233	5,374	(2.6)	5,196	5,447	(4.6)
Products	2,001	1,775	12.7	1,882	1,721	9.4
Residual fuel oil	508	325	56.3	438	355	23.4
All other	1,493	1,450	3.0	1,444	1,366	5.7
Total imports	8,168	7,931	3.0	7,991	7,948	0.5
Total supply	17,956	17,834	0.7	17,823	17,958	(0.8)
Stock change, all oils	-1,269	-598	na	-1,348	+40	na
Refinery Operations:						
Input to crude distillation units	13,414	13,161	1.9	13,486	13,169	2.4
Operable capacity	15,145	15,140	0.0	15,145	15,142	0.0
Refinery utilization[7]	88.6	86.9	na	89.0	87.0	na
Crude oil runs	13,190	12,923	2.1	13,232	12,953	2.2

	February 1994	January 1994	February 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	330.5	333.4	331.3	(0.9)	(0.2)
Unfinished oils	105.1	99.9	99.7	5.2	5.4
Total motor gasoline	227.0	233.2	241.6	(2.7)	(6.0)
Finished oxygenated	17.4	27.8	23.0	(37.4)	(24.4)
Finished reformulated	0.0	0.0	na	na	na
Finished other	164.2	162.6	176.8	1.0	(7.1)
Blending components	45.4	42.8	41.8	6.1	8.6
Naphtha-jet	1.9	2.5	4.5	(24.0)	(57.8)
Kerosine-jet	37.5	38.0	37.8	(1.3)	(0.8)
Distillate fuel oil	104.2	118.6	109.4	(12.1)	(4.8)
≤ 0.05 percent sulfur	46.4	52.9	15.6	(12.3)	197.4
> 0.05 percent sulfur	57.8	65.7	93.8	(12.0)	(38.4)
Residual fuel oil	41.6	44.2	42.1	(5.9)	(1.2)
All other oils	131.7	145.2[R]	152.9	(9.3)	(13.9)
Total all oils	979.5	1,015.0[R]	1,019.3	(3.5)	(3.9)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. 2—Based on API estimated data converted to a monthly basis. 3—Source: U.S. Energy Information Administration (including any adjustments). 4—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). 5—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. 6—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. 7—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". R—Revised. E—Estimated. na-Not available.

A2575-2

American Petroleum Institute
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Washington, D.C. 20005

Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 3
MARCH 1994

SUMMARY

After unusually large year-to-year gains in January and February, it would not have been surprising if petroleum deliveries' growth had moderated somewhat in March. However, this month's 0.4 percent decline also reflects above-trend deliveries last March, particularly for "other oils". Had deliveries last March been more on-trend, deliveries this March, rather than falling, would have risen around 3 percent.

This is despite gasoline's 0.7 percent decline this March, which actually did reflect weak deliveries this year. Nevertheless, for the quarter as a whole, gasoline deliveries rose 1.6 percent. For distillate fuel oil, cold weather swelled deliveries' growth to nearly 9 percent for the quarter, and kerosine jet fuel deliveries rose 5.5 percent. Residual fuel oil deliveries were up 18 percent. As for total deliveries, January's unusually cold weather helped to boost year-to-year growth to 4.8 percent for the quarter; netting out the weather impact, we still estimate that underlying consumption has been growing at 2 to 3 percent.

Meanwhile, although total imports rose only 1.6 percent for the quarter, this was more the result of the substantial stock draw so far this year than of a true moderation in the underlying need for imports. Total inventories for the first three months of the year fell at an unusually high rate of 992 thousand B/D, contrasting with only 121 thousand B/D in the year-ago period. Without this draw, imports so far this year would have grown about 12 percent or one million B/D.

For March, domestic crude oil production fell 3.9 percent, bringing the quarter's decline overall to 2.2 percent. Lower 48 production fell almost 3 percent for the first three months while Alaskan production fell only 1.3 percent.

With refinery activity finally winding down in March from an active winter season, input to distillation units for the month declined 2.9 percent from a year ago—its first year-to-year decline in over a year. But for the first quarter as a whole, input still exceeded that of a year ago by half a percent, and utilization reached a recent-year first-quarter high of 88.3 percent.

Total inventories fell almost 90 million barrels for the quarter as a whole, and at 970 million barrels, total stocks ended the month below recent-year March levels of around one billion barrels. Distillate inventories, which had already been within 6 million barrels of the average seasonal low at the end of February, slipped only another 2.5 million barrels in March. They ended the month at 102 million barrels, slightly above what had been the typical seasonal low before the low- sulfur/high-sulfur differentiation went into effect last October.

PRODUCT SUPPLIED

Gasoline

PRIOR MONTHS' INCREASES REVERSED IN MARCH.

The stronger-than-expected results for gasoline deliveries earlier in the year reversed in March, for which deliveries dropped 0.7 percent. For the quarter as a whole, however, deliveries still rose 1.6 percent. Oxygenated gasoline, including gasohol, accounted for a substantially larger share of deliveries this March than last—19 percent, versus 8 percent a year ago. For the quarter, oxygenated gasoline accounted for 27 percent of deliveries, up from 16 percent last year. Some of this increased share is accounted for by greater volumes of gasohol, reflecting changes in the tax treatment of ethanol blending which now allow partial credit for blends of less than 10 percent ethanol.

Meanwhile, January's data on travel confirm what was already known—that the month's severe weather served to depress highway travel. According to the most recent Federal Highway Administration data, miles traveled, after averaging a year-to-year increase of close to 3 percent in the fourth quarter of last year, fell 0.4 percent in January. In fact, the drop in travel seems surprisingly large, even accounting for the inclement weather. Nevertheless, we estimate that, weather aside, more recent growth in travel, on a month-to-month basis, has been increasing at as much as a 4 to 5 percent annual rate.

Distillate Fuel Oil

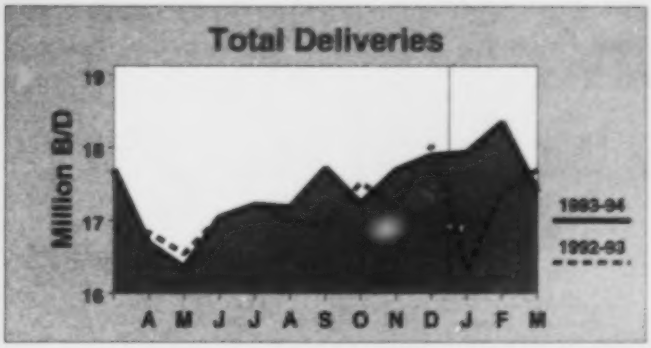
DELIVERIES RISE NEARLY 9 PERCENT FOR THE QUARTER.

After two months of unusually strong year-to-year increases, distillate deliveries in March fell slightly versus a year ago. Weather in March averaged roughly 9

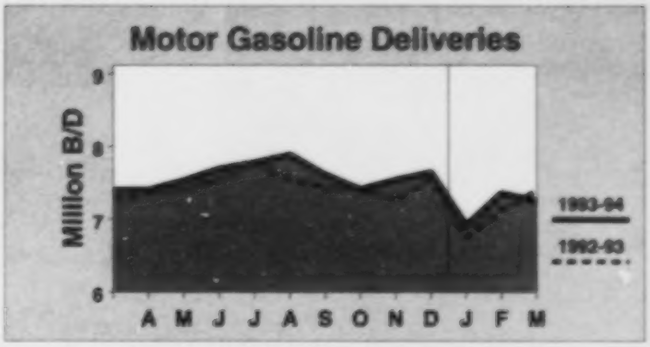
API ESTIMATES

	MARCH		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.6	(0.4)	17.9	4.8
Crude production	6.6	(3.9)	6.8	(2.2)
Total imports	8.5	2.6	8.2	1.6
Stocks (million bbl)	970	(3.6)	na	na

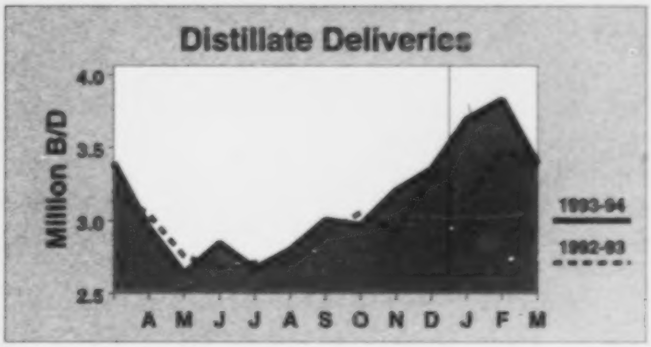
Published April 13, 1994



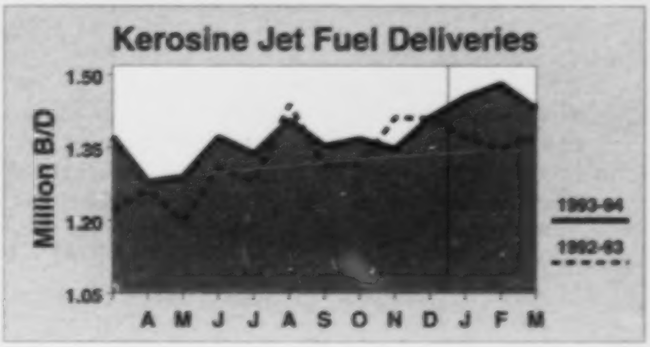
Total Deliveries



Motor Gasoline Deliveries



Distillate Deliveries



Kerosine Jet Fuel Deliveries

percent warmer than a year ago nationally, cutting perhaps 80-100 thousand B/D off of consumption versus last March.

For the quarter, deliveries were up nearly 9 percent because of the severe cold in January, which not only boosted heating oil demand but caused a surge in electric utility usage due to high electricity demand and limited natural gas availability. Netting out these effects, growth in deliveries for the quarter would have been up about 4 percent. Deliveries of low-sulfur diesel averaged 45 percent of deliveries during the first quarter.

Kerosine Jet Fuel

DELIVERIES' GROWTH MODERATES IN MARCH. The unusually strong year-to-year growth in deliveries of kerosine jet fuel of the past several months subsided to 1.1 percent for March—more in line with the underlying growth in commercial air travel. Deliveries for the quarter as a whole rose 5.5 percent—but more on the strength of blending with distillate to improve cold-weather properties. The military switchover to kerosine-jet from naphtha jet is also believed to have added to deliveries as the military builds inventories.

Deliveries for the first quarter, at 1.44 million B/D, were the highest quarterly level ever for kerosine jet fuel.

Residual Fuel Oil

YEAR-TO-YEAR RISE CONTINUES. Deliveries of residual fuel oil rose 11.5 percent for the month, their fifth year-to-year gain in a row. For the quarter, deliveries rose 17.7 percent due to a continued price advantage compared with natural gas. However, from a longer perspective, the first quarter's average of 1.26 million B/D was only equal to what it was two years ago and down substantially compared with levels of the late 1980s, as residual fuel oil was edged out by competing fuels, particularly at electric utilities.

Other Oils

DOWN FOR MARCH, UP FOR THE QUARTER. Deliveries of "other oils" had shown strong year-to-year increases in January and February—but rose less than one percent for March. This was mainly because of comparison against unusually strong deliveries of "other oils" last March, particularly for liquefied petroleum gases and for gasoil-based petrochemical feedstock.

But if March's year-to-year change was understated in comparison with underlying consumption growth, the quarter's growth of 6.5 percent appears a bit stronger than expected, in part because January's deliveries growth had been quite strong due to below-trend deliveries in the year-ago period. We estimate that underlying consumption growth for "other oils" probably amounted to 3 percent or so for the first quarter.

SUPPLY

Production

CRUDE OIL OUTPUT FALLS 2 PERCENT FOR THE QUARTER. For March, domestic crude oil production fell 3.9 percent, bringing the quarter's decline to 2.2 percent. The lower 48's 130 thousand B/D, 2.5 percent decline for the first three months is surprisingly small given the relative weakness in oil prices. For all of last year, lower 48 crude oil production had fallen 4 percent or about 225 thousand B/D.

Alaskan output fell only 1.3 percent during the first quarter, or about 20 thousand B/D—its smallest quarterly decline in more than two years. Last year's gas-handling upgrade on the North Slope and the coming onstream of the Point McIntyre field appear to have paid off, if not with an actual increase in Alaskan production, at least with a postponement of the natural decline of existing production. Previously, Alaskan production had been declining at a rate of roughly 100 thousand B/D per year.

Nevertheless, six years have now passed since Alaska's peak production of over 2 million B/D, and output there is down more than 20 percent or 400 thousand B/D compared with then. This has amounted to more than a quarter of the decline in overall U.S. crude production over this period.

Imports

IMPORT GROWTH CUSHIONED BY STOCK DRAW.

Total imports rose only 2.6 percent for March and 1.6 percent for the quarter. But the first quarter's roughly 100 thousand B/D increase is deceptively small. Growth in imports was temporarily slowed in this year's first quarter by an unusually large draw on domestic inventories amounting to an average of almost a million B/D over the quarter, compared with only 121 thousand B/D for the same period a year ago. Without this draw, imports so far this year would have grown about 12 percent or over one million B/D.

Meanwhile, product imports were up nearly 16 percent for the month and over 15 percent for the quarter. They exceeded 2 million B/D for the first time on a quarterly basis in over three years. Gasoline imports, in particular, have been surprisingly strong, reaching nearly 350 thousand B/D in March and 280 thousand B/D for the quarter as a whole. The quarter's imports of finished gasoline were up more than 35 percent from the first quarter of 1993 as prices of exports from Europe have reportedly attracted shipments to the eastern U.S.

Residual fuel oil imports were also up a strong 37 percent to 485 thousand B/D in the first quarter, their highest quarterly level in more than two years. Distillate imports rose 16 percent to 250 thousand B/D, and imports of kerosine jet fuel rose 17 percent to 108 thousand B/D.

Refinery Operations

ACTIVITY SLACKENS DURING MARCH.

With refinery activity finally winding down in March from an active winter season, input to distillation units for the month declined 2.9 percent from a year ago—its first year-to-year decline in over a year. Last March, in contrast, refinery activity had already been picking up in preparation for the summer season, after a slower January-February period. Viewed for the quarter as a whole, however, these timing shifts more or less canceled each other out. For this year's first quarter as a whole, input still exceeded that of a year ago by half a percent, and utilization reached a recent-year first quarter high of 88.3 percent.

For March, output of motor gasoline rose 0.4 percent, while kerosine jet fuel production dropped 3.5 percent versus last March. But output of distillate continued to surge, rising 7.5 percent versus a year ago. Residual fuel oil production rose 4.8 percent over last March.

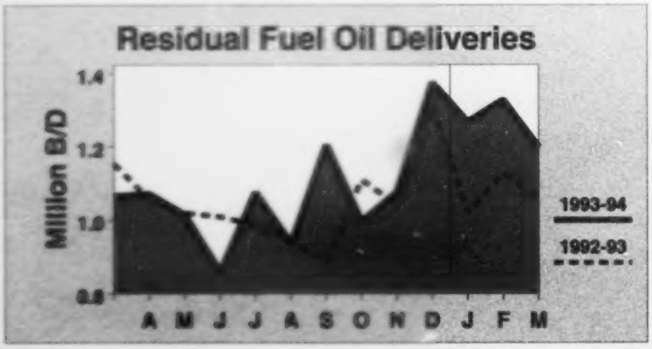
Inventories

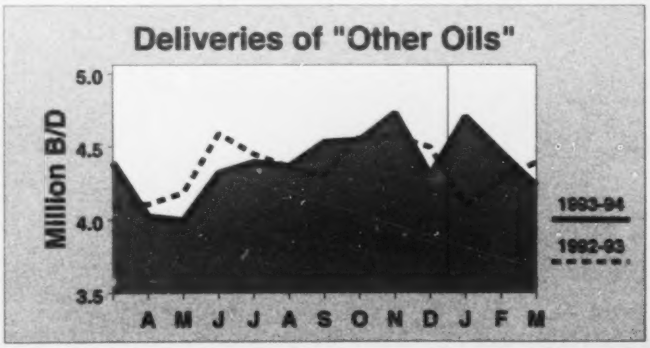
TOTAL INVENTORIES NEAR BOTTOM OF HISTORICAL RANGE.

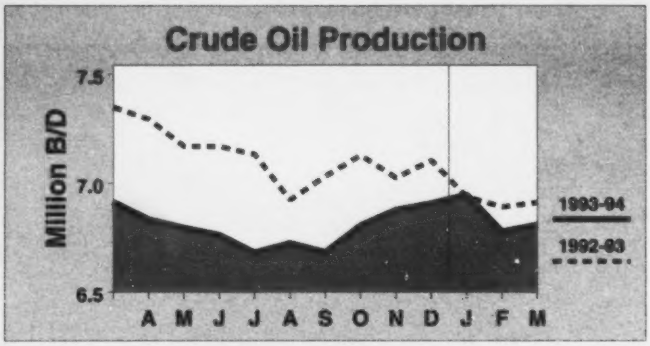
Following substantial drops in total inventories in January and February—amounting to over 60 million barrels—total stocks fell a further 24 million barrels during March. This was about double the recent-year average March decline. At 970 million barrels, total stocks ended the month below the recent-year March low of 989 million barrels. Crude oil stocks rose 6.5 million barrels to 337 million barrels, about the same as last year but roughly 5 million barrels below average for this time of year.

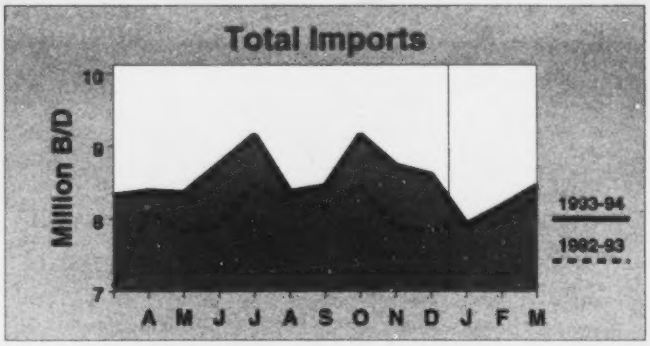
Mainly because of an end-of-season, 7 million barrel drop in stocks of oxygenated gasoline to 10 million barrels, total inventories of gasoline (including blending components) fell 13 million barrels during March. Their month-end level of 214 million barrels was below average for the month but not particularly low compared with year-round stock levels.

Distillate inventories, which had already been within 6 million barrels of the average seasonal low at the end of February, slipped only another 2.5 million barrels in March. The recent-year average drop for March has been more on the order of 10 million barrels, but typically from a somewhat higher level. Distillate stocks ended the month at 102 million barrels, slightly above what had been the typical seasonal low before the low-sulfur/high-sulfur differentiation went into effect last October. There was a decided shift towards low-sulfur stocks during the month, with high-sulfur distillate falling 7 million barrels compared with the end of February to 51 million barrels while low-sulfur rose 4 million barrels to 50 million barrels.






Crude Oil Production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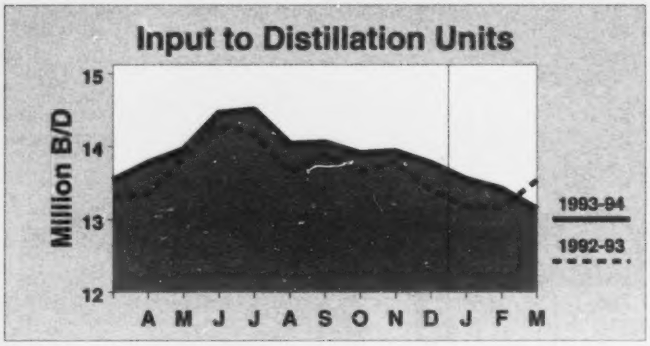
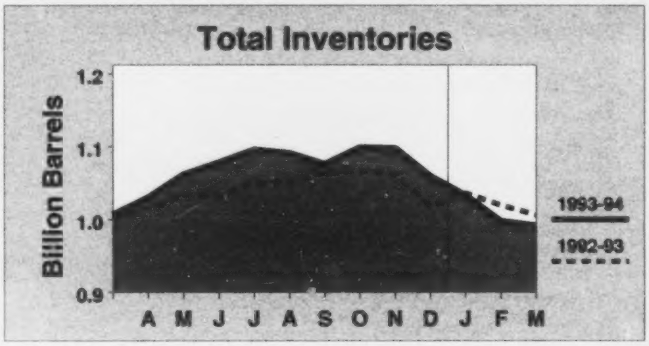

Input to Distillation Units


Total Inventories

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ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	March			Year-to-Date		
	1994[2]	1993[3]	% Change	1994[4]	1993[3]	% Change
Disposition:						
Total motor gasoline	7,349	7,397	(0.7)	7,202	7,089	1.6
Finished oxygenated	1,374	575[E]	139.0	1,934	1,145[E]	68.9
Finished reformulated	0	na	na	0	na	na
Finished other	5,975	6,822[E]	(12.4)	5,268	5,944[E]	(11.4)
Naphtha-jet	66	123	(46.3)	61	119	(48.7)
Kerosine-jet	1,386	1,371	1.1	1,438	1,363	5.5
Distillate fuel oil	3,356	3,393	(1.1)	3,618	3,332	8.6
≤ 0.05 percent sulfur	1,598	383[E]	317.2	1,640	398[E]	312.1
> 0.05 percent sulfur	1,758	3,010[E]	(41.6)	1,978	2,934[E]	(32.6)
Residual fuel oil	1,187	1,065	11.5	1,258	1,069	17.7
All other oils (including crude losses)	4,424	4,393	0.7	4,532	4,254	6.5
Reclassified[5]	-151	-47	na	-162	-98	na
Total domestic products supplied	17,617	17,695	(0.4)	17,947	17,128	4.8
Exports	1,010	963	4.9	943	1,044	(9.7)
Total disposition	18,627	18,658	(0.2)	18,890	18,172	4.0
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,646	6,912	(3.9)	6,762	6,914	(2.2)
Natural gas liquids	1,632	1,799	(9.3)	1,630	1,763	(7.5)
Other supply[6]	1,056	1,205	(12.4)	1,303	1,301	0.2
Total domestic supply	9,334	9,916	(5.9)	9,695	9,978	(2.8)
Imports:						
Crude oil (excluding SPR imports)	6,409	6,481	(1.1)	6,179	6,315	(2.2)
From Canada	880	814	8.1	905	792	14.3
All other	5,529	5,667	(2.4)	5,274	5,523	(4.5)
Products	2,117	1,829	15.8	2,024	1,758	15.1
Residual fuel oil	447	352	27.0	485	354	37.0
All other	1,670	1,477	13.1	1,539	1,404	9.6
Total imports	8,526	8,310	2.6	8,203	8,073	1.6
Total supply	17,860	18,226	(2.0)	17,898	18,051	(0.9)
Stock change, all oils	-767	-432	na	-992	-121	na
Refinery Operations:						
Input to crude distillation units	13,148	13,535	(2.9)	13,360	13,295	0.5
Operable capacity	15,145	15,148	(0.0)	15,126	15,144	(0.1)
Refinery utilization[7]	86.8	89.4	na	88.3	87.8	na
Crude oil runs	12,831	13,249	(3.2)	13,099	13,055	0.3

	March 1994	February 1994	March 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	337.0	330.5	337.1	2.0	(0.0)
Unfinished oils	102.8	105.1	103.5	(2.2)	(0.7)
Total motor gasoline	214.4	227.0	227.4	(5.6)	(5.7)
Finished oxygenated	9.9	17.4	17.5	(43.1)	(43.4)
Finished reformulated	0.0	0.0	na	na	na
Finished other	165.3	164.2	169.5	0.7	(2.5)
Blending components	39.2	45.4	40.4	(13.7)	(3.0)
Naphtha-jet	1.8	1.9	4.4	(5.3)	(59.1)
Kerosine-jet	34.9	37.5	37.0	(6.9)	(5.7)
Distillate fuel oil	101.7	104.2	97.5	(2.4)	4.3
≤ 0.05 percent sulfur	50.7	46.4	12.4	9.3	308.9
> 0.05 percent sulfur	51.0	57.8	85.1	(11.8)	(40.1)
Residual fuel oil	41.3	41.6	40.7	(0.7)	1.5
All other oils	135.9	145.8[R]	158.4	(6.8)	(14.2)
Total all oils	969.8	993.6[R]	1,006.0	(2.4)	(3.6)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. **2**—Based on API estimated data converted to a monthly basis. **3**—Source: U.S. Energy Information Administration (including any adjustments). **4**—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). **5**—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. **6**—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. **7**—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

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American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 4
APRIL 1994

SUMMARY

Year-to-year gains in total deliveries returned in April after being interrupted by March's decline. Total deliveries rose 2.6 percent for the month, with a substantial decline for residual fuel oil deliveries partially masking reasonably strong growth for most other major products. Our estimate of underlying growth in consumption so far this year of close to 3 percent, net of weather effects, still appears reasonable.

Both gasoline and distillate deliveries turned positive again after declining in March. Gasoline deliveries rose 2.2 percent in April, and distillate deliveries, 4.6 percent versus a year ago, both increases being not too far out of line with estimated consumption trends. For kerosine jet fuel, deliveries jumped 9.7 percent, at least partly because of the military phaseout of naphtha jet on the East and Gulf coasts which officially got under way in April. But for the first time in six months, residual fuel oil deliveries declined. The 15 percent drop followed a first quarter increase of over 20 percent.

Domestic crude oil production fell 3.8 percent, or about 260 thousand B/D, in April versus a year ago. Technical problems on the North Slope contributed to a nearly 6 percent decline for Alaska, while lower 48 output dropped close to 165 thousand B/D, or more than 3 percent.

With the less-than-seasonal increase in inventories for April, imports continued to trend upward more slowly than actual underlying requirements. For April, total imports increased 5.8 percent year to year to over 8.8 million B/D. Although actual imports accounted for 48 percent of domestic deliveries for the first four months of 1994, netting out the inventory draw would have boosted the percentage to 52 percent.

Refinery activity returned to high levels in April after a brief pause in March. Utilization of capacity, at 92.5 percent, reached its highest rate in seven months and also exceeded last April's 91.0 percent. Input to distillation units rose 1 percent over a year ago.

Between the end of March and the end of April, total inventories rose 5 million barrels—about 10 million barrels less than average for the month. As a result, total inventories, at 975 million barrels, continued near their lowest level in 20 years. Much of this was due to lower estimated stock levels for "other oils". Crude stocks, though down 12 million barrels from a year ago, were, at 338 million barrels, up by 7 million barrels from their recent February low. Gasoline stocks were only slightly below average, while distillate stocks were higher than in recent past Aprils. This was due in part to the need to segregate high- and low-sulfur diesel grades, which has likely increased minimum operating inventories.

PRODUCT SUPPLIED

Gasoline

MARCH'S DECLINE REVERSED IN APRIL. In April, gasoline deliveries returned to the pattern of year-to-year increases that had been temporarily broken with March's decline. Deliveries rose 2.2 percent for the month and 1.5 percent for the year to date. With the EPA-initiated winter oxygenate season past, deliveries of oxygenated gasoline amounted to about 1.2 million B/D for the month, less than half the January peak of over 2.5 million B/D.

Recently-released data on travel during February confirm that January's half percent, year-to-year decline in miles traveled was due more to the severe winter weather than to a genuine change in trend. February travel increased over 3 percent from the year-earlier period, more in line with previous year-to-year increases. Still, with the apparent strengthening of the economic recovery, February's increase was a bit less than might have been expected. Nevertheless, it seems unlikely that there has been a slackening in the trend in travel; data for March and April, which would help to clarify this, are as yet unavailable.

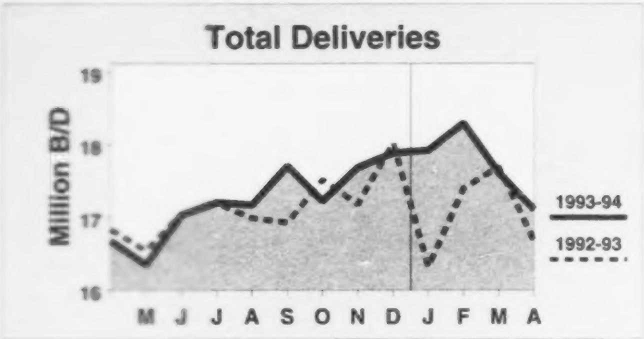
Distillate Fuel Oil

UP 4.6 PERCENT DESPITE WARMER WEATHER. If there had been any doubt about the strength of distillate fuel oil demand in March, when deliveries had declined slightly from year-ago levels, it was easily dispelled by April's 4.6 percent deliveries increase. The rise came

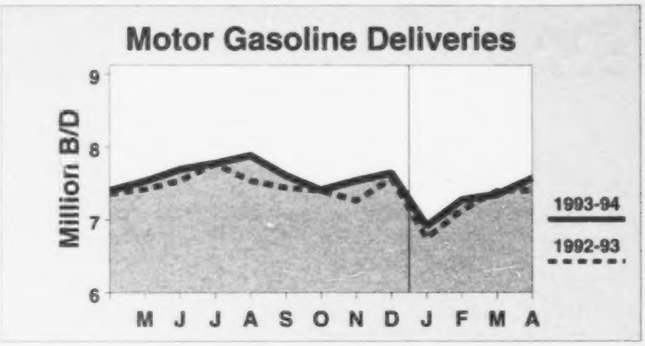
API ESTIMATES

	APRIL		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.1	2.6	17.7	4.2
Crude production	6.6	(3.8)	6.7	(2.6)
Total imports	8.9	5.8	8.4	3.6
Stocks (million bbl)	975	(5.3)	na	na

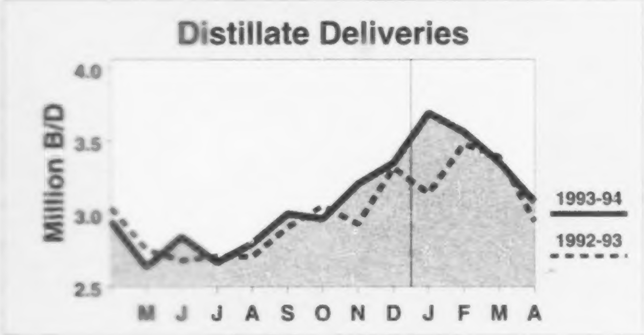
Published May 18, 1994



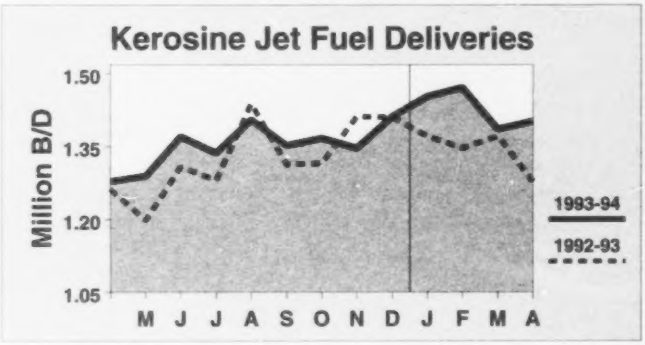
Total Deliveries



Motor Gasoline Deliveries



Distillate Deliveries



Kerosine Jet Fuel Deliveries

despite milder weather this April than last. Weather which averaged about 15 percent warmer nationally than a year ago would have been expected to dampen heating oil demand modestly, even at the tail-end of the heating season.

April's growth in distillate deliveries can thus be attributed essentially to stronger transportation demand. Highway freight demand, which we estimated had been growing at 3 to 4 percent, may have been modestly reduced by trucking strikes, but rail demand continued to grow at about a 5 percent rate in April. This figure includes rail transport of intermodal containers and trailers, which have grown at a more than 10 percent rate so far this year.

Deliveries of high-sulfur distillate dropped to 1.3 million B/D in April from about 2.0 million B/D at the peak of the winter season, reflecting the decline in heating demand. As a result, low-sulfur diesel accounted for nearly 57 percent of deliveries in April, its highest share since the EPA rule went into effect last October.

Kerosine Jet Fuel

MILITARY SWITCH CONTRIBUTES TO APRIL'S INCREASE.

With little if any real growth in miles flown so far this year, deliveries of kerosine jet fuel nevertheless jumped nearly 10 percent in April and 6.3 percent for the year to date—in large part due to the military's ongoing switch from naphtha jet fuel.

As for commercial air travel, increased load factors have enabled the industry to increase revenue passenger miles by about 3 percent so far this year without an increase in actual miles flown. The load factor in the first quarter of this year rose to 61 percent from 58 percent a year ago for domestic flights, according to Air Transport Association data, while for international flights it rose from 65 to 67 percent.

Much of the growth in kerosine jet fuel deliveries so far this year that cannot be attributed to cold-weather blending with distillate has no doubt been due to the ongoing military switch-over from naphtha jet. Without the military switch, deliveries of kerosine jet would have grown only an estimated 1 percent so far in 1994.

Deliveries of military-use naphtha jet fuel had for years amounted to roughly 200 thousand B/D, but have dwindled to only about 60 thousand B/D for the first four months of this year because of scaled-back military activity and the fuel switch. The West Coast, which had accounted for 40-50 thousand B/D of naphtha jet usage, was converted late last year. The transition for the East Coast-Gulf Coast region, which accounts for much of the remaining naphtha-jet consumption, officially began in April. Once that transition is completed in early June, roughly 80 percent or more of the conversion will have taken place.

Residual Fuel Oil

FIRST YEAR-TO-YEAR DECLINE IN SIX MONTHS.

Experiencing their first year-to-year decline in half a year, deliveries of residual fuel oil dropped 15.1 percent in April. This falloff contrasts with an increase of over 20 percent in the first quarter, when, demand was boosted by unusually cold weather and an ongoing fuel cost advantage compared with natural gas for electric utilities and industrial users.

Indicators suggest stronger underlying demand for resid than April's deliveries data indicate. Though resid prices edged up in April, they still presented an advantage versus natural gas to many utility and other users with switching capability, as they have since the middle of last year. Unusually warm weather in the Southeast, where roughly a third of utility resid consumption currently takes place, also boosted electricity demand there in April. It could well be that utilities, after rebuilding inventories in

February and March following the nearly 700 thousand B/D burn in January's cold snap—nearly twice the amount burned in a more mild January 1993—postponed some purchases in April in view of higher product prices.

Other Oils

UP NEARLY 5 PERCENT DURING APRIL.

Deliveries of "other oils" rose 4.9 percent in April. Combined with strong increases earlier in the year, due in part to the effects of unusually cold weather on LPG demand, the year-to-date deliveries increase works out to nearly 6 percent.

Given that the highest annual growth seen for "other oils" in past years, at its best, reached 4 percent in 1992, this year's year-to-date increase seems an unlikely indicator of the underlying trend in consumption. In fact, leaving out January's unusually large, weather-related increase of 15 percent, deliveries growth for "other oils" has averaged about 4 percent for the most recent three months. This appears closer to the likely trend in consumption growth.

SUPPLY

Production

BOTH ALASKAN AND LOWER 48 OUTPUT FALL.

In April, domestic crude oil production fell 3.8 percent, or about 260 thousand B/D, versus a year ago. Despite the facilities enhancements on the North Slope, technical problems there held down Alaskan production for the month. As a result, output in Alaska fell nearly 6 percent, or 94 thousand B/D versus last April. In the lower 48, crude oil output fell nearly 165 thousand B/D or more than 3 percent.

The latest drilling data have shown continued declines as well. First quarter well completions fell 20 percent from a year ago, with a more than 30 percent decline for gas completions. The decline for gas was mainly a reflection of the unusually strong completion activity in early 1993, a lagged effect from expiration of Section 29 credits for wells spudded before the end of 1992.

In fact, natural gas completions so far this year still exceeded oil completions, and were still ahead by 14 percent compared with two years ago. Furthermore, data on rig activity show a 15 percent increase for natural gas activity for the first quarter versus last year. Oil well completions for the first quarter declined more than 10 percent, to 1,826. This was the first quarter in recent memory for which oil completions have fallen below 2,000.

Imports

STRENGTHENING FOR CRUDE, SLACKENING FOR PRODUCTS

With the less-than-seasonal increase in inventories for April, import levels continued to trend upward more slowly than actual underlying requirements. Total imports increased 5.8 percent to over 8.8 million B/D, with most of the 482 thousand B/D year-to-year increase taking place in crude oil imports. Netting out the inventory draw, total imports as a percentage of domestic deliveries so far this year would have amounted to 52 percent, rather than the 48 percent calculated from actual import levels.

Crude oil imports have been progressively moving up from less than 6 million B/D in January to over 7 million B/D in April, and marked a 6.6 percent increase from a year ago for the month. Meanwhile, product imports have fallen from levels of nearly 2.2 million B/D in February—their highest monthly level in more than three years— down to 1.8 million B/D in April, but were still up slightly versus a year ago. From March to April alone, likely reflecting a lessening in the economic attractiveness of some foreign products, distillate imports fell from over 300 thousand B/D to just over 200 thousand B/D, and residual fuel oil imports fell from roughly 450 thousand B/D to recent-year low of 265 thousand B/D. Finished gasoline imports remained strong, however, at nearly 400 thousand B/D—roughly 150 thousand B/D higher than a year ago and up from March levels, as well.

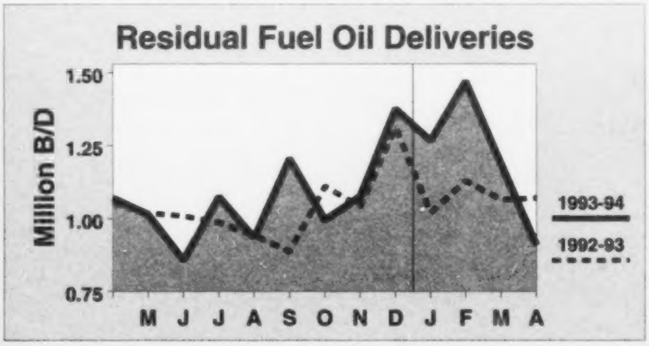
Refinery Operations

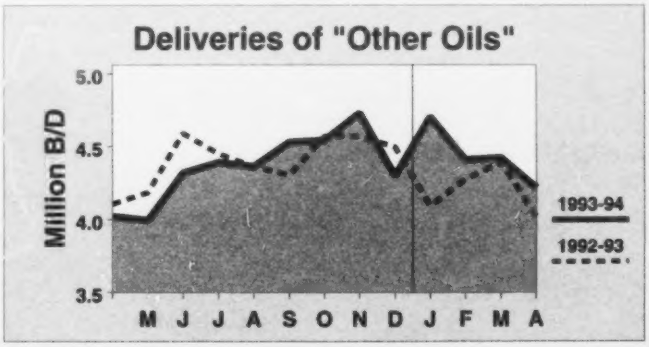
APRIL'S ACTIVITY BOUNCES BACK.

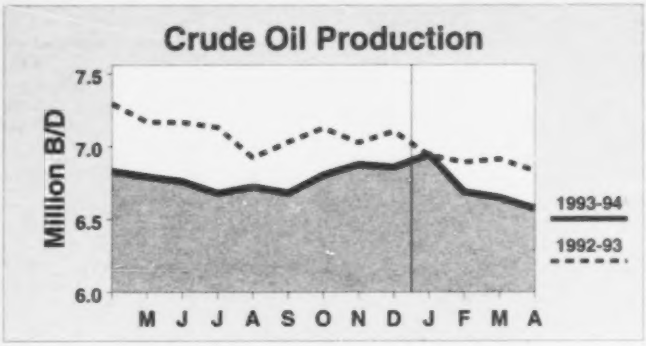
If overall U.S. refinery activity had taken a breather in March after an active winter season, it was ready to return to high operation levels again in April. Input to distillation units jumped to over 13.9 million B/D from 13.1 million B/D in March. Inputs marked a 1 percent gain over year-ago levels, as well, after March's roughly 3 percent year-to-year decline. Its highest rate in seven months, utilization averaged 92.5 percent for the month.

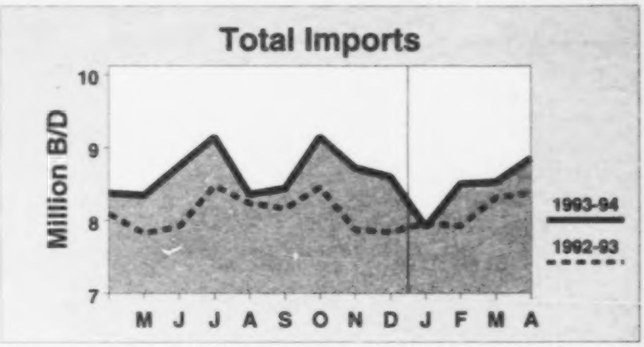
Gasoline output slipped slightly from a year ago, continuing for a fifth month its pattern of declines or only modest increases. Oxygenated gasoline accounted for 14 percent of production. With the EPA-mandated winter oxygenate season essentially behind, much of this was likely due to ethanol-blending downstream from refineries.

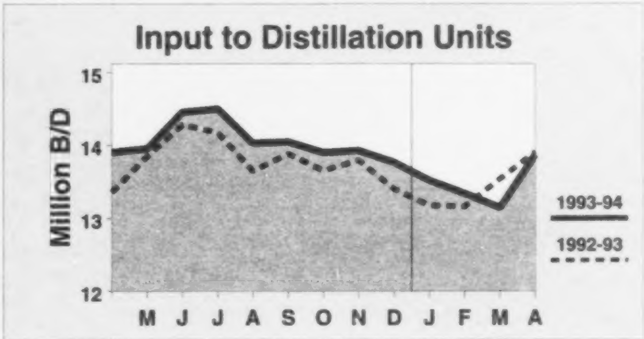
Distillate output in April nearly matched the unusually strong levels of a year earlier. Low-sulfur distillate production has risen from a mid-winter level of 1.4 million B/D, or over 45 percent of output, to nearly 1.9 million B/D, or 56 percent of refinery pro-

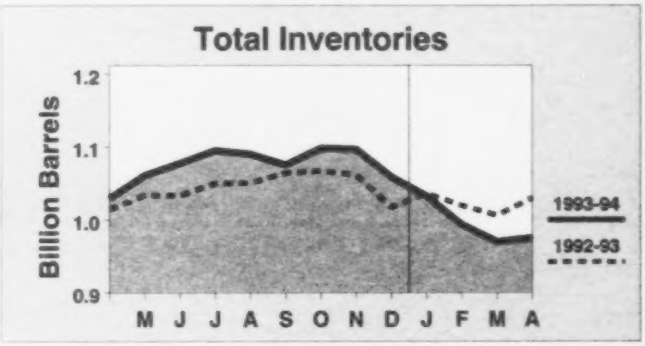

Residual Fuel Oil Deliveries


Deliveries of "Other Oils"


Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

duction for April. While part of this increase went to supply seasonal increases in diesel demand, roughly a third of it went to building low-sulfur inventories.

Kerosine jet fuel production inched ahead by 0.9 percent from last April. Despite the extremely weak deliveries of resid in April, production of this product rose 1.5 percent for the month.

Inventories

TOTAL STOCKS REMAIN NEAR RECENT-YEAR LOW. From March to April, total inventories rose 5 million barrels—about 10 million barrels less than average for this time of year. With a month-end balance of 975 million barrels, inventories remained at among the lowest levels experienced in 20 years. This low level was mainly due to a lower estimated stock level for "other oils".

Crude stocks, rising marginally during April, ended the month at 338 million barrels. Although still at the low end of the range of recent past Aprils, this was more than 7 million barrels higher than the recent-month low reached at the end of February.

Rising 3 million barrels to 217 million barrels, gasoline inventories ended the month at a level only slightly below average for April. Distillate stocks increased 2 million barrels to 104 million barrels, higher than the 92 to 103 million barrel range of recent past years. However, part of this was undoubtedly due to higher minimum operating inventories caused by the need to keep high- and low-sulfur fuels segregated. With the heating season essentially past, stocks of high sulfur distillate declined to 49 million barrels. This was their lowest month-end level since the low-sulfur program began last October. Inventories of low sulfur diesel continued to build, to 55 million barrels from a winter-time low of 49 million barrels in January.

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ESTIMATED UNITED STATES PETROLEUM BALANCE[1]

(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	April			Year-to-Date		
	1994^{2}	1993^{3}	% Change	1994^{4}	1993^{3}	% Change
Disposition:						
Total motor gasoline	7,565	7,401	2.2	7,273	7,167	1.5
Finished oxygenated	1,184	235^{E}	403.8	1,805	918^{E}	96.6
Finished reformulated	0	na	na	0	na	na
Finished other	6,381	7,166^{E}	(11.0)	5,468	6,249^{E}	(12.5)
Naphtha-jet	74	115	(35.7)	60	118	(49.2)
Kerosine-jet	1,402	1,278	9.7	1,427	1,342	6.3
Distillate fuel oil	3,085	2,949	4.6	3,424	3,237	5.8
≤ 0.05 percent sulfur	1,749	210^{E}	732.9	1,665	351^{E}	374.4
> 0.05 percent sulfur	1,336	2,739^{E}	(51.2)	1,759	2,886^{E}	(39.1)
Residual fuel oil	908	1,070	(15.1)	1,204	1,070	12.5
All other oils (including crude losses)	4,218	4,020	4.9	4,442	4,195	5.9
Reclassified^{5}	-144	-160	na	-101	-113	na
Total domestic products supplied	17,108	16,673	2.6	17,729	17,016	4.2
Exports	1,015	1,067	(4.9)	960	1,050	(8.6)
Total disposition	18,123	17,740	2.2	18,689	18,066	3.5
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,573	6,830	(3.8)	6,715	6,893	(2.6)
Natural gas liquids	1,700	1,790	(5.0)	1,648	1,769	(6.8)
Other supply^{6}	1,175	1,536	(23.5)	1,184	1,359	(12.9)
Total domestic supply	9,448	10,156	(7.0)	9,547	10,021	(4.7)
Imports:						
Crude oil (excluding SPR imports)	7,019	6,586	6.6	6,423	6,383	0.6
From Canada	942	783	20.3	928	789	17.6
All other	6,077	5,803	4.7	5,495	5,594	(1.8)
Products	1,836	1,787	2.7	2,021	1,765	14.5
Residual fuel oil	265	377	(29.7)	448	360	24.4
All other	1,571	1,410	11.4	1,573	1,405	12.0
Total imports	8,855	8,373	5.8	8,444	8,148	3.6
Total supply	18,303	18,529	(1.2)	17,991	18,169	(1.0)
Stock change, all oils	+180	+789	na	-698	+103	na
Refinery Operations:						
Input to crude distillation units	13,907	13,773	1.0	13,480	13,414	0.5
Operable capacity	15,040	15,144	(0.7)	15,081	15,144	(0.4)
Refinery utilization^{7}	92.5	91.0	na	89.4	88.6	na
Crude oil runs	13,707	13,512	1.4	13,237	13,169	0.5

	April 1994	March 1994	April 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	337.6	337.0	349.1	0.2	(3.3)
Unfinished oils	99.6	102.8	101.9	(3.1)	(2.3)
Total motor gasoline	217.0	214.4	222.4	1.2	(2.4)
Finished oxygenated	5.6	9.9	11.3	(43.4)	(50.4)
Finished reformulated	0.0	0.0	na	na	na
Finished other	171.5	165.3	171.6	3.8	(0.1)
Blending components	39.9	39.2	39.5	1.8	1.0
Naphtha-jet	1.6	1.8	4.0	(11.1)	(60.0)
Kerosine-jet	36.9	34.9	37.3	5.7	(1.1)
Distillate fuel oil	104.0	101.7	98.3	2.3	5.8
≤ 0.05 percent sulfur	55.2	50.7	12.8	8.9	331.3
> 0.05 percent sulfur	48.8	51.0	85.5	(4.3)	(42.9)
Residual fuel oil	40.5	41.3	41.4	(1.9)	(2.2)
All other cils	138.2	136.1^{R}	175.2	1.5	(21.1)
Total all oils	975.4	970.0^{R}	1,029.6	0.6	(5.3)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. **2**—Based on API estimated data converted to a monthly basis. **3**—Source: U.S. Energy Information Administration (including any adjustments). **4**—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). **5**—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. **6**—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. **7**—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

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American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 5
MAY 1994

SUMMARY

Growth in total petroleum deliveries continued to strengthen in May. The month's 4.4 percent increase reflected, in particular, the effects of reasonably healthy economic growth on demand for highway fuels. Gasoline deliveries, roughly tracking estimated consumption, rose 2.3 percent over last May's level. Distillate deliveries' unusually large increase of 10.8 percent, even after accounting for the effects of unseasonably cold weather in the Eastern U.S. and other factors, still incorporated underlying consumption growth for that fuel on the order of 4 percent..

Kerosine jet fuel deliveries also rose in May, by nearly 5 percent. However, this growth came essentially at the expense of naphtha jet, which declined by nearly the same 63 thousand B/D that kerosine jet fuel increased and mainly reflected the military's ongoing conversion to kerosine-based jet fuel. Residual fuel oil deliveries, too, had little to contribute to May's year-to-year increase in petroleum deliveries. Though not declining as substantially as in April, in May they still fell slightly short of year-ago levels.

Overall domestic crude oil production, despite a slight year-to-year gain for Alaskan crude, still fell 3.2 percent or about 220 thousand B/D in May. For the lower 48, crude oil production fell 4.2 percent. Natural gas liquids production appears to be recovering gradually from its dropoff late last year, but in May still fell slightly short of year-ago levels.

Total petroleum imports rose 5.5 percent in May versus one year earlier. More than half of the half-million B/D increase the result of a surge in product imports, which jumped 16 percent from a year ago to 2.15 million B/D. Gasoline imports, in particular, at 450 thousand B/D, reached their highest monthly level in three years.

Spirited refinery activity in May put input to distillation units up by nearly 2 percent over a year ago. As a result, utilization of reported capacity reached 95.3 percent, up more than 2 points from a year ago and its highest level in at least twenty years. Output slates continued to favor distillate and kerosine jet fuel over gasoline and resid.

Total inventories continued to rise less than seasonally in May, with an ending level roughly 45 million barrels below average for the month. At 1,015 million barrels, total inventories reached their lowest May level in eight years. Month-end crude oil stocks alone were about 25 million barrels below average for May, down more than 7 million barrels from April's level at 330 million barrels. Gasoline inventories, however, ended the month within the typical May range, and distillate stocks were roughly 10 million barrels above recent years' experience.

PRODUCT SUPPLIED

Gasoline

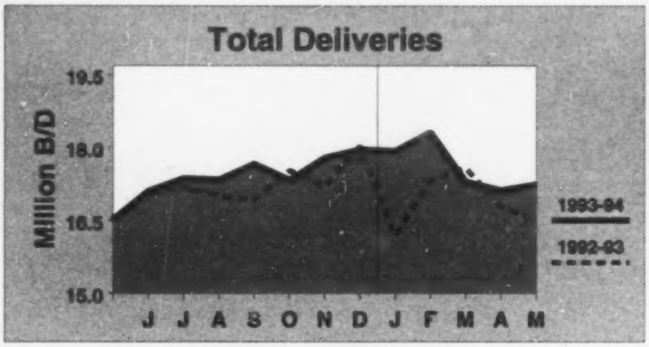
THE ECONOMY BOOSTS DEMAND FOR GASOLINE... More or less tracking the estimated growth in consumption, deliveries of motor gasoline rose 2.3 percent in May. With disposable personal income in 1994 increasing at a rate of 3-4 percent, year to year, compared with less than 2 percent last year, improved economic growth appears to be contributing to this year's stronger gasoline demand. Greater demand has translated into higher deliveries of low-RVP product as well. Although the low-RVP season does not begin until June 1 for consumers, preparations by refiners and distributors have already been in the works for several months. Low-RVP gasoline, defined as 7.8 psi for southern ozone non-attainment areas and 9.0 psi elsewhere, was to be at terminals by May 1 and available at retail by June 1.

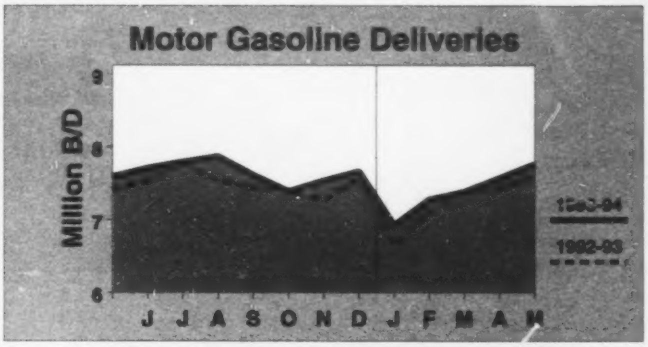
Data on miles traveled finally seem to be falling into line with the strengthening in gasoline demand growth. Following a weather-related decline in January, March's greater than 5 percent increase was more than enough to offset a still-weak February, which had been revised downward to a less than 2 percent rise. If anything, March's increase in travel, the greatest year-to-year increase in over two years, was a bit stronger than expected. We estimate that travel in April and May averaged 3-4 percent ahead of a year ago.

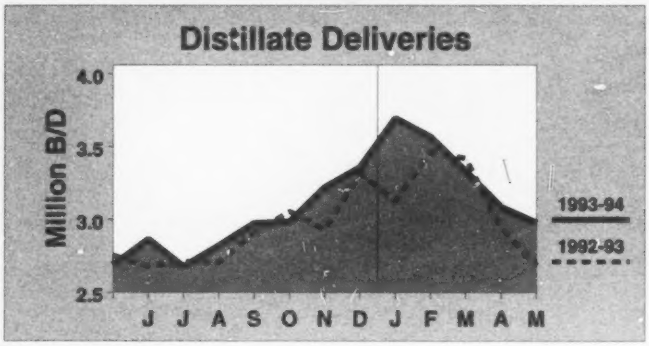
API ESTIMATES

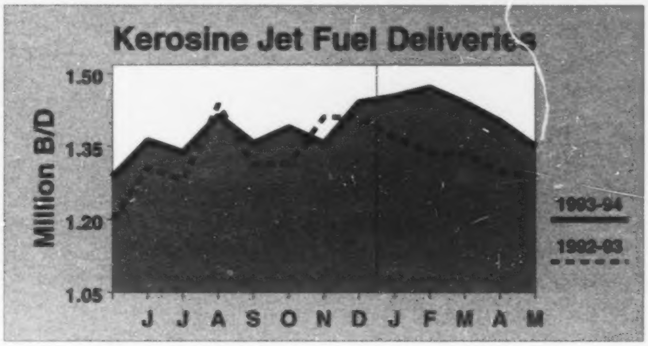
	MAY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.2	4.4	17.6	4.1
Crude production	6.6	(3.2)	6.7	(3.5)
Total imports	9.1	5.5	8.6	3.0
Stocks (million bbl)	1,016	(4.9)	na	na

Published June 15, 1994









Distillate Fuel Oil

...AND FOR DIESEL.

The surprisingly large, nearly 11 percent increase in distillate fuel oil deliveries in May was partly due to unseasonably cold weather and data anomalies. But, even after accounting for these, there remained substantial underlying growth in consumption. Beneath the month's large increase was an estimated underlying consumption trend of around 4 percent attributable largely to transportation demand. Highway demand is estimated to have grown 4 to 5 percent in May and rail traffic has been rising at a similar rate.

Part of the unusual size of May's deliveries increase was attributable to the cold snap in late May in the East and Midwest. The cold weather set new records for daily lows in some regions and there were even reports of snow in Maine. Nationally, heating degree days averaged roughly 40 percent colder than one year earlier—enough, even in May, to give rise to heating demand in regions which normally have little if any such needs this late in the season. We estimate this boosted the year-to-year comparison for total distillate deliveries by 2-3 percent. Finally, deliveries last May were around 100 thousand B/D below trend, serving to exaggerate the year-to-year increase this year by another 3-4 percent.

Kerosine Jet Fuel

NAPHTHA JET'S DROP OFFSETS GAIN FOR KEROSINE JET.

Kerosine jet fuel deliveries, taken alone, rose 4.9 percent for May—but the rise was entirely attributable to the ongoing military conversion from naphtha jet fuel. Naphtha jet deliveries fell to a new low for the month of only 47 thousand B/D, less than half the 113 thousand B/D level of a year ago. Although the inland and Rocky Mountain areas remain to be converted over the next year and a half, the changeover to JP-8 in the Eastern/Gulf Coast region, due to be largely completed early June, has eliminated much of remaining naphtha jet demand. The switch began only last year in the U.S., but was started overseas with a conversion for U.K. operations in 1979.

Meanwhile, air traffic has continued to grow—but not in terms of aircraft miles or fuel consumption. Revenue passenger miles have been rising at about a 3 percent rate, but increased load factors have kept aircraft miles flat or even down slightly.

Residual Fuel Oil

STILL FALLING SHORT OF YEAR-AGO LEVEL.

Deliveries of residual fuel oil strengthened somewhat in May versus April. Nevertheless, though they did not decline at the double-digit rate experienced in April, May's resid deliveries still fell slightly short of year-ago levels. The experience of the past two months contrasts with earlier in the year, when substitution from natural gas and weather-induced electric utility demand caused deliveries to jump by 20 percent or more.

May's unseasonably cold weather did not have as much influence on utility usage as it might have in mid-winter. Since residual fuel oil serves in an incremental role more than that of a base-load fuel, off-season surges in electricity demand are less likely to call into play additional resid-fired generation. In fact, May has traditionally been one of the lowest months of the year for resid usage at electric utilities. Furthermore, with respect to relative BTU costs, the balance in May still appeared to be tilted towards resid over gas for electric utilities and others with switching capability. But with resid prices rising and gas prices slipping, resid's advantage was eroding rapidly.

Other Oils

DELIVERIES RISE NEARLY 7 PERCENT.

Deliveries of "other oils" rose an estimated 6.7 percent for May—outside of their weather-related jump in January, their largest gain so far this year. For the year to date, deliveries of "other oils" were up 4.9 percent.

First quarter data from the Department of Energy confirm that a substantial portion of the first quarter's 4.6 percent rise in deliveries was weather-related. Roughly 80 percent of the January-March increase in deliveries took place in the LPGs, particularly early in the quarter, when severe cold gripped the Eastern U.S. More recently, various data suggest that petrochemical feedstock demand, particularly for gasoil, has contributed to the deliveries increase for "other oils". Ethane for chemical feedstock use, however, has reportedly been weaker.

SUPPLY

Production

ALASKAN OUTPUT RISES SLIGHTLY, BUT TOTAL FALLS.

Alaskan production surpassed year-ago levels for only the second time this year in May, but just barely. Output there averaged 1.57 million B/D, up about 5 thousand B/D from year-ago levels. Various technical problems earlier in the year had sporadically hindered operations. Nevertheless, year-to-date Alaskan crude production is off only about 30 thousand B/D or 2 percent, compared with previous declines running around 100 thousand B/D per year or so.

Lower 48 output continued to drop, taking the U.S. total with it. Production outside Alaska fell over 220 thousand B/D, or 4.2 percent. For the U.S. as a whole, production dropped by 3.2 percent.

Meanwhile, natural gas liquids production—which now, with the decline in crude, accounts for roughly a fifth of all domestic liquids output—appears to be recovering some of the ground it lost late last year and earlier this year. Growth in the production of NGLs (liquefied petroleum gases and other petroleum compounds extracted from natural gas streams) had been running more than 4 percent ahead of the year-ago period through last October. But, in late 1993 and early 1994, higher gas prices, combined with the slide in oil prices, impaired extraction economics and cut NGL output. NGL extraction rates, which had been running at around 1.75 million B/D through last fall, fell to less than 1.60 million B/D in December.

Since then gas prices have softened and oil prices have trended upwards, reducing their value as part of the natural gas stream and increasing their value as extracted petroleum products. As a result, NGL output has risen to an estimated 1.725 million B/D for May, but was still off slightly from a year ago.

Imports

PRODUCTS UP BY 16 PERCENT.

Rising 5.5 percent versus one year earlier in May, 300 thousand B/D of petroleum imports' 475 thousand B/D increase was the result of a surge in product imports. As has been the case earlier this year, growth in actual imports has understated the underlying need for imports because of greater-than-usual supplies being drawn from domestic stocks or smaller-than-usual inventory builds. If adjusted for differences in inventory patterns this year versus last, the growth in imports in May would have been more than 11 percent.

Product imports in May jumped 16 percent from a year ago to 2.15 million B/D. For the year to date, product imports have averaged 2.05 million B/D, their highest level for a similar period since 1990. Accounting in May for more than a third of the roughly 300 thousand B/D year-to-year gain were gasoline imports, which rose 40 percent to 450 thousand B/D—their highest monthly level in three years.

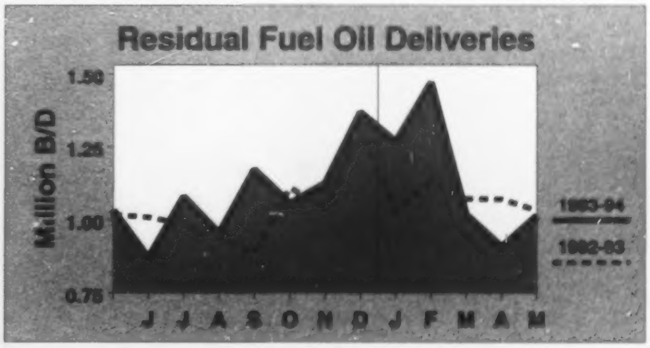
The higher level of gasoline imports of the past several months reflects an economically attractive price differential versus European sources. The latest definitive import data by source, which run through March, illustrate these developments. Between January and March, imports from the Americas (the Virgin Islands, Canada, Venezuela, and others) rose modestly, from about 190 thousand B/D to 225 thousand B/D. But imports from a diversity of European sources surged from a mere 15 thousand B/D to over 160 thousand B/D because of lower prices across the Atlantic compared with the U.S. As a result, total finished gasoline imports jumped from 206 thousand B/D in January to 387 thousand B/D in March. Relative price data indicate that this advantage continued in May.

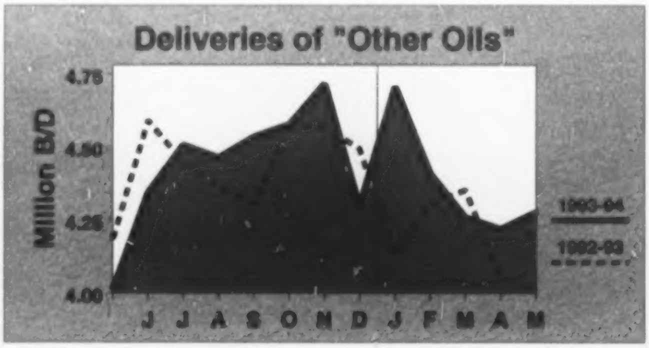
Distillate imports for May rose 38 thousand B/D from a year ago to 191 thousand B/D, and imports of kerosine jet fuel increased 21 thousand B/D to 88 thousand B/D. Imports of residual fuel oil rose 70 thousand B/D to 386 thousand B/D.

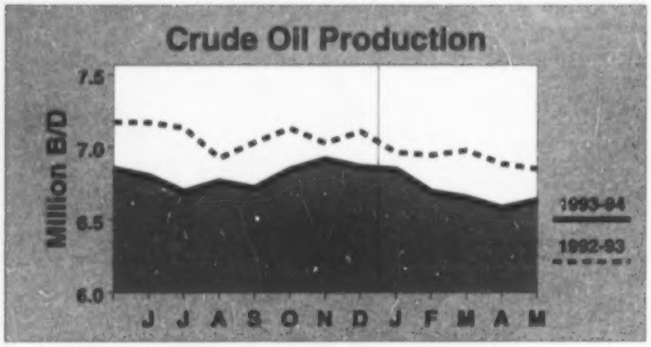
Refinery Operations

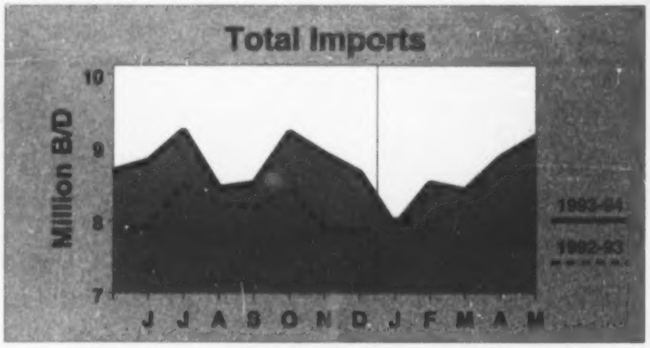
UTILIZATION REACHES A RECENT-YEAR HIGH.

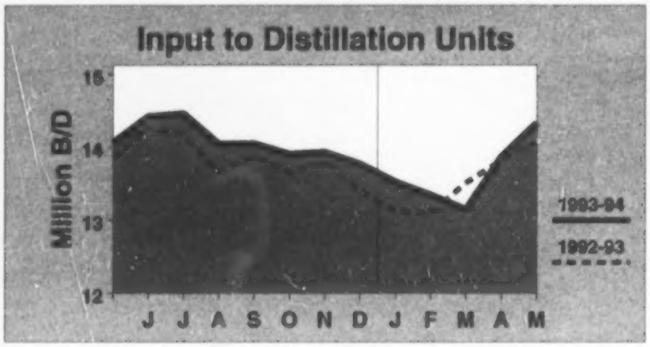
Spirited refinery activity in May put input to distillation units up by nearly 2 percent over a year ago, to 14.33 million B/D. As a result, utilization of reported capacity reached 95.3 percent, up more than 2 points from a year ago and its highest level in at least twenty years.

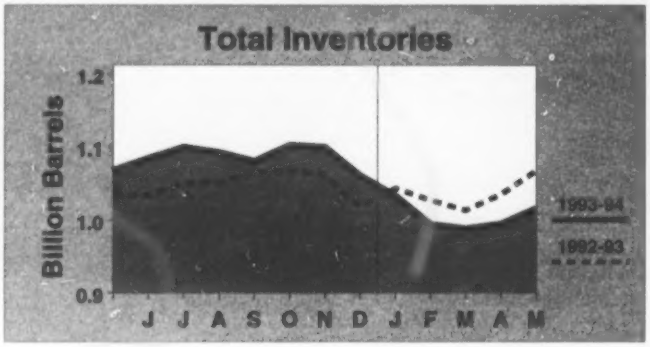

Residual Fuel Oil Deliveries


Deliveries of "Other Oils"


Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

Output slates continued to lean towards middle distillates, with distillate production up over 13 percent, and kerosine jet fuel, 7.1 percent. Gasoline production was only flat versus a year ago, following April's year-to-year increase—but was still stronger than the 4.3 percent decline in output for the first quarter. With the decline in residual fuel oil deliveries for the month and the rise in imports, domestic production of residual fuel oil dropped nearly 11 percent versus last May.

Inventories

CRUDE OIL KEEPS TOTAL STOCKS LOW. Continuing April's pattern, total petroleum inventories in May again rose less than seasonally. The 21 million barrel increase since the end of April was only about two-thirds the roughly 30 million barrel average rise for that month in recent years. As a result, total inventories amounted to only 1,015 million barrels at the end of the month—their lowest May level in eight years and about 45 million barrels below the recent-year average for the month. Stocks of unfinished oils, down 13 million barrels from their recent-year average for May, accounted for part of May's lower inventory level, but the bulk of the difference was due to crude oil stocks.

Crude oil stocks ended the month about 25 million barrels below average for May, falling more than 7 million barrels to 330 million barrels. Although this is no lower than the 330-338 million barrel range experienced so far this year, crude oil stocks' pattern this year contrasts with their more typical behavior. On average, crude oil stocks have risen about 30 million barrels over the first five months of the year.

Gasoline inventories dropped marginally to just over 216 million barrels, in the middle of the roughly 210-225 million barrel recent-year range for May. In recent years, gasoline inventories have fallen as often as they have risen during May. In fact, gasoline inventories have typically declined by 10 to 20 million barrels throughout the spring from their seasonal high in January or February.

Distillate inventories rose 9 million barrels during May, the increase nearly evenly split between low-and high-sulfur product. The reduced flexibility of storage necessitated by product segregation no doubt contributed to a higher distillate stock level at the end of May compared with recent years. At 113 million barrels, distillate stocks were roughly 10 million barrels higher than the 100-104 million barrels for May of the previous three years.

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ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	May			Year-to-Date		
	1994[2]	1993[3]	% Change	1994[4]	1993[3]	% Change
Disposition:						
Total motor gasoline	7,759	7,585	2.3	7,379	7,233	2.0
Finished oxygenated	905	834[E]	8.5	1,629	1,494[E]	9.0
Finished reformulated	0	na	na	0	na	na
Finished other	6,854	6,751[E]	1.5	5,750	5,739[E]	0.2
Naphtha-jet	47	113	(58.4)	58	115	(49.6)
Kerosine-jet	1,351	1,288	4.9	1,423	1,326	7.3
Distillate fuel oil	2,976	2,685	10.8	3,327	3,123	6.5
≤ 0.05 percent sulfur	1,795	311[E]	477.2	1,708	361[E]	373.1
> 0.05 percent sulfur	1,181	2,374[E]	(50.3)	1,619	2,762[E]	(41.4)
Residual fuel oil	1,015	1,033	(1.7)	1,131	1,066	6.1
All other oils (including crude losses)	4,276	4,009	6.7	4,373	4,167	4.9
Reclassified[5]	-193	-206	na	-131	-164	na
Total domestic products supplied	17,231	16,507	4.4	17,560	16,866	4.1
Exports	960	1,082	(11.3)	945	1,058	(10.7)
Total disposition	18,191	17,589	3.4	18,505	17,924	3.2
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,628	6,847	(3.2)	6,676	6,921	(3.5)
Natural gas liquids	1,725	1,732	(0.4)	1,673	1,768	(5.4)
Other supply[6]	1,388	1,397	(0.6)	1,298	1,258	3.2
Total domestic supply	9,741	9,976	(2.4)	9,647	9,947	(3.0)
Imports:						
Crude oil (excluding SPR imports)	6,988	6,809	2.6	6,512	6,511	0.0
From Canada	920	874	5.3	949	798	18.9
All other	6,068	5,935	2.2	5,563	5,713	(2.6)
Products	2,150	1,854	16.0	2,049	1,799	13.9
Residual fuel oil	386	316	22.2	427	354	20.6
All other	1,764	1,538	14.7	1,622	1,445	12.3
Total imports	9,138	8,663	5.5	8,561	8,310	3.0
Total supply	18,879	18,639	1.3	18,208	18,257	(0.3)
Stock change, all oils	+688	+1,050	na	-297	+333	na
Refinery Operations:						
Input to crude distillation units	14,329	14,062	1.9	13,655	13,528	0.9
Operable capacity	15,040	15,151	(0.7)	15,051	15.135	(0.6)
Refinery utilization[7]	95.3	92.8	na	90.7	89.4	na
Crude oil runs	14,172	13,829	2.5	13,459	13,280	1.4

	May 1994	April 1994	May 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	330.1	337.6	352.9	(2.2)	(6.5)
Unfinished oils	97.5	99.6	104.1	(2.1)	(6.3)
Total motor gasoline	216.5	217.0	224.8	(0.2)	(3.7)
Finished oxygenated	3.1	5.6	7.7	(44.6)	(59.7)
Finished reformulated	0.0	0.0	na	na	na
Finished other	175.6	171.5	179.1	2.4	(2.0)
Blending components	37.8	39.9	38.0	(5.3)	(0.5)
Naphtha-jet	2.0	1.6	4.2	25.0	(52.4)
Kerosine-jet	40.5	36.9	38.5	9.8	5.2
Distillate fuel oil	113.3	104.0	102.8	8.9	10.2
≤ 0.05 percent sulfur	59.6	55.2	12.2	8.0	388.5
> 0.05 percent sulfur	53.7	48.8	90.6	10.0	(40.7)
Residual fuel oil	39.1	40.5	43.1	(3.5)	(9.3)
All other oils	176.5	157.0[R]	197.0	12.4	(10.4)
Total all oils	1,015.5	994.2[R]	1,067.4	2.1	(4.9)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. 2—Based on API estimated data converted to a monthly basis. 3—Source: U.S. Energy Information Administration (including any adjustments). 4—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). 5—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. 6—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. 7—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

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Monthly Statistical Report

Finance, Accounting, and Statistics Department

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SUMMARY

Spurred by unusually strong economic growth, petroleum deliveries in the first half of 1994 experienced their largest year-to-year increase for a similar period in more than eight years. It is true that up to one percentage point of the first half's 4.2 percent rise can be attributed to the combined, short-term effects of harsh winter weather early in the year and price-induced switching to heavy fuel oil from natural gas at electric utilities. But the bulk of the increase represents the effects of economic growth estimated at roughly 4 percent compared with one year earlier.

That economic growth compares favorably with more moderate rates of 2.5 to 3 percent in the previous two years. Correspondingly, the underlying growth trend in petroleum consumption for the first half, estimated at around 3 percent, was measurably higher than the 1.5 percent average growth of deliveries in the past two years, which in turn had followed two years of declines. The correspondence between economic growth and petroleum consumption in the U.S. has roughly paralleled that of other major industrial countries (*see box, page 3*).

Moderate to strong growth for all major products contributed to the first half's increase. The smallest rate of growth among the major products was for gasoline, at 1.7 percent—a rate only marginally higher than last year's 1.4 percent annual increase. Deliveries of distillate fuel oil, however, boosted in part by rising economic activity and unusual cold early in the year, jumped 6.2 percent.

Despite a weak second quarter, residual fuel oil deliveries rose 7.6 percent for the first half, benefiting early in the year from a price advantage over natural gas at electric utilities. Deliveries of kerosine jet fuel increased 9.4 percent over the same period last year—but more because of cold-weather blending and the military switch from naphtha-based jet fuel than because of any significant growth in commercial miles flown.

While demand was rising, domestic production continued to fall. U.S. crude oil production dropped 3.6 percent from last year's first half to 6.65 million B/D, its lowest level for a six-month period in 36 years. Alaskan production, due to facilities enhancements and the coming onstream of the Point McIntyre field late last year, slipped 1.8 percent. This was only about a third the average decline rate of the two previous years. Output in the lower 48, however, dropped 4.1 percent to 5.08 million B/D, its lowest level since 1950.

Despite strong growth in demand and the continued decline in domestic supplies, total imports rose just 4.1 percent—less than half the rate that would have been needed to close the gap between consumption and domestic production. The remainder was withdrawn from domestic inventories, which, as a result, fell to levels at the low end of recent years' experience for mid-year. We estimate that, adjusted for varying inventory behavior, petroleum imports for the first half would have grown at an annual rate of 9-10 percent.

At refineries, the first half's stronger demand was reflected in higher runs. Input to distillation units increased 1 percent, raising the average utilization rate to 91.6 percent—a rate only exceeded, for a six-month period, in last year's second half. Utilization for the second quarter alone reached 94.6 percent, its highest quarterly rate in decades.

June's lower ending stock level was largely the result of lower inventories for crude oil, residual fuel oil, and unfinished oils. Stocks of major light products, in contrast, ended the month at roughly average levels for mid-year.

PRODUCT SUPPLIED

Gasoline

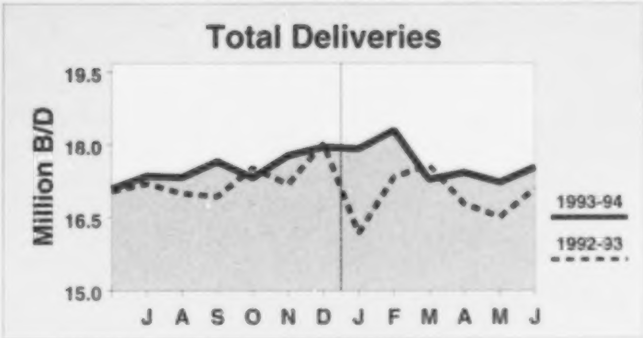
FIRST-HALF GROWTH MODERATELY STRONGER. With the smallest rate of increase for any of the major products, gasoline deliveries rose 1.7 percent in the first half of 1994—only moderately higher than 1993's annual 1.4 percent rise. The 127 thousand B/D increase accounted for less than one fifth of the first half's deliveries gain, and was consistent with the estimated trend in consumption growth of 1.5 to 2 percent.

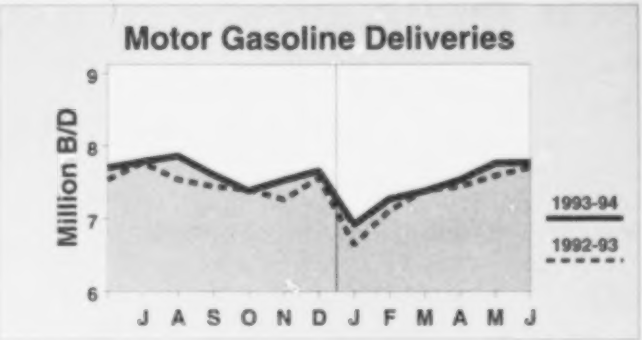
Although the rate of growth in highway travel is estimated to have strengthened in the second quarter over the first, gasoline deliveries data followed the opposite pattern. First quarter travel was hampered by poor winter driving conditions, and highway travel rose only 1.7 percent. Second quarter mileage, benefiting

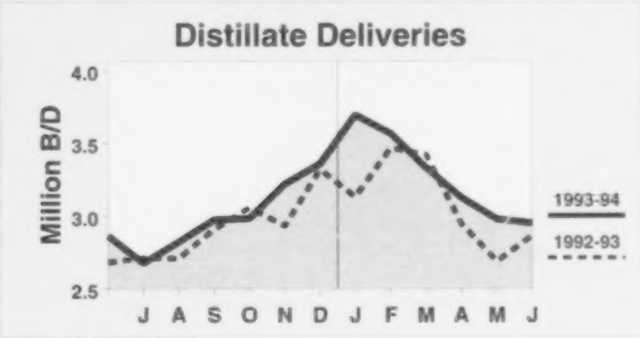
API ESTIMATES

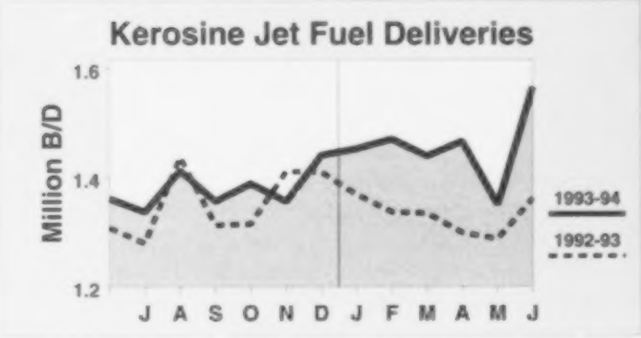
	JUNE		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.5	2.6	17.6	4.2
Crude production	6.5	(3.8)	6.7	(3.6)
Total imports	9.6	8.6	8.7	4.1
Stocks (million bbl)	1,033	(4.7)	na	na

Published July 14, 1994









from less severe weather, is estimated to have risen more than 3.5 percent over year-ago levels. Meanwhile, in part because of June's less than 1 percent rise, second quarter growth for gasoline softened to 1.5 percent, compared to 2 percent in the first. Whatever the short-term divergences, over the period as a whole, a more consistent pattern emerges. The estimated increases of 2.8 percent for highway travel and 1.7 percent for deliveries in this year's first half were both roughly equal to their respective average rates of the past two years.

Regionally, travel and deliveries data both indicate that gasoline demand growth has been weakest on the East Coast, where more than a third of consumption takes place. If nothing else, this reflects the region's lower rate of population growth, particularly in the Northeast. Regional data available through April actually show a half-percent decline in deliveries for the East Coast for the first four months of the year (even with the surprisingly large, 4 percent increase for January). Deliveries growth in the rest of the U.S. averaged a stronger 3 percent over the period.

Distillate Fuel Oil

ECONOMY SPURS TRANSPORTATION USE. Among all the major products, distillate fuel oil's 6.2 percent, 190 thousand B/D increase was the single largest contributor to first-half 1994's growth in total deliveries. It was also distillate fuel oil's largest year-to-year gain for a similar period in ten years. The first quarter's 5.8 percent rise had been boosted in part by unusually cold weather, but the second quarter's increase was an even greater 6.6 percent. Actual growth in consumption for the first half, though perhaps not quite as robust as the deliveries data indicate, is still estimated at a reasonably strong 4 to 5 percent. Low sulfur diesel, now required for highway use, accounted for 52 percent of deliveries in the first half.

The severe cold early in the year elevated demand, at least briefly—January heating degree days in the Northeast averaged nearly 35 percent colder than normal and added as much as an estimated 300-400 thousand B/D to heating oil and electric utility demand that month. But it was the growing economy's impact on freight transportation demand that played the key role in distillates' first-half increase.

Overall, the economy is estimated to have grown about 4 percent from a year ago. (Although the more-commonly quoted figures for Gross Domestic Product are on a quarter-to-quarter, annualized basis, year-to-year comparisons to match those for deliveries are most appropriate here). Growth in sectors tied to freight transportation demand have been particularly strong. Industrial production has been running at about 5 percent ahead of year-ago levels, while shipments by manufacturers and by wholesale and retail trade establishments have each averaged 6 percent higher than a year ago, even after adjusting for inflation. In addition to spurring highway diesel demand, this has boosted rail traffic as well. Rail ton-miles rose 4 percent for the first half, with unusually strong growth for intermodal trailers and containers. Intermodal traffic alone rose nearly 14 percent, roughly double the rate of recent prior years.

Kerosine Jet Fuel

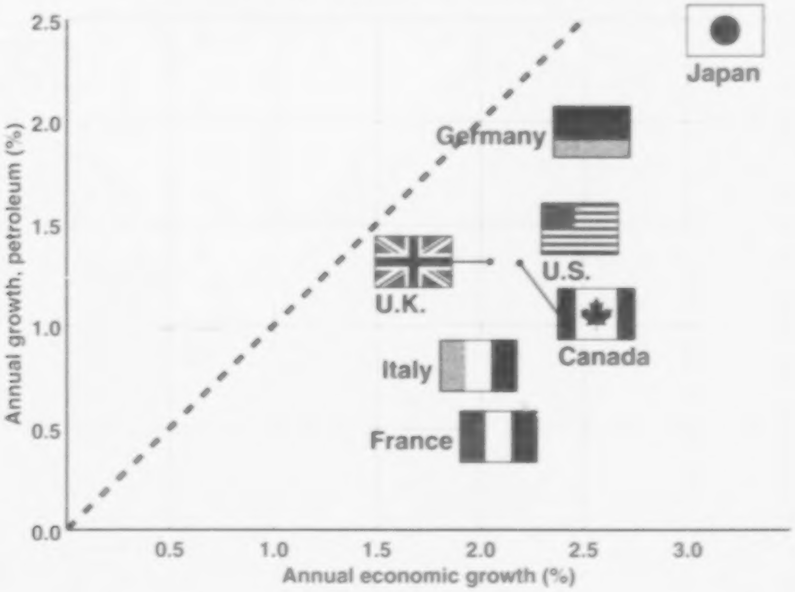
DELIVERIES RISE, BUT NOT BECAUSE OF AIR TRAFFIC. Kerosine jet fuel deliveries rose 9.4 percent for the first half—but little if any of that growth came because of higher commercial air traffic. While revenue passenger miles rose 3-4 percent in the first half, that increase was almost entirely absorbed by means of higher utilization of existing aircraft. Domestically, the average load factor rose from about 60 percent in the first half of last year to nearly 63 percent this year. For international flights

PETROLEUM CONSUMPTION AND ECONOMIC GROWTH

As the accompanying graph shows, oil consumption and economic growth have correlated reasonably closely among seven leading industrial nations between 1985 and the first half of 1994.

- The economies of the six other nations other than the U.S., taken together, have grown an average of about 2.5 percent per year over the period. Petroleum consumption has grown about 1.5 percent annually. Higher average economic growth has been associated with higher growth for petroleum.
- For the U.S., the relationship between economic growth and petroleum consumption has been closely in line with that of the other countries shown. The U.S. economy has also grown an average 2.5 percent per year, and petroleum consumption has also risen about 1.5 percent per year.
- Although higher growth for petroleum has been associated with stronger economic growth, the increases in petroleum consumption have been less than proportional. (If they had been proportional, the points in the graph would have fallen on the dotted line shown.) Increasing efficiency, substitution of other fuels, and shifts in the mix of economic activities can all potentially affect the consumption/economy link.

Economic growth and petroleum consumption
Seven major industrial nations, 1985-94



the load factor has risen to 67 percent from 65 percent. As a result, miles flown were nearly flat for both domestic and international flights.

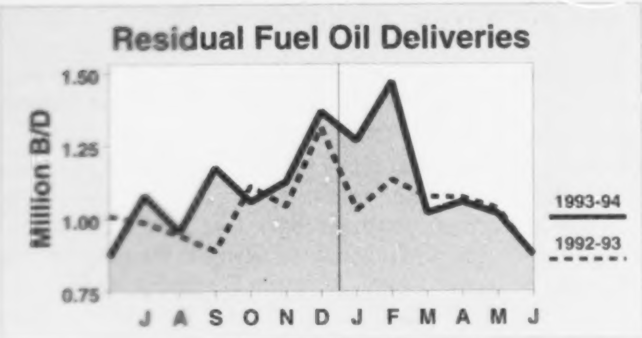
Blending demand for kerosine jet fuel early in the year accounted for some of its apparent growth in deliveries as frigid weather spurred its use to improve cold-weather properties of diesel fuel. But a more significant factor for the period as a whole has been the ongoing conversion by the military from naphtha-based to kerosine-based jet fuel.

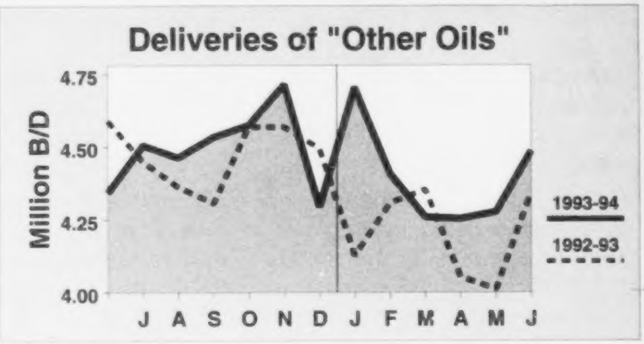
Deliveries of military-use naphtha jet fuel had for years averaged close to 200 thousand B/D. But by June they had shrunk to about 50 thousand B/D because of the conversion to JP-8, as well as scaled-back military activity. The switch started at overseas bases in 1979, but did not begin in the U.S. until last year when the West Coast, which had accounted for 40-50 thousand B/D of naphtha jet usage, was converted. The transition for the region comprising the East Coast and Gulf Coast, which accounted for much of the remaining naphtha-jet consumption, took place during the second quarter of this year. The inland and Rocky Mountain areas remain to be converted over the next year and a half.

As a result of the conversion, deliveries of naphtha jet were roughly halved for the first six months of this year versus last. That drop of 65 thousand B/D alone accounted for about half the year-to-year increase in kerosine jet fuel deliveries for the same period.

Residual Fuel Oil

FIRST QUARTER'S RISE REVERSED IN SECOND. Though deliveries of residual fuel oil rose 7.6 percent for the first six months as a whole, that figure alone belies the weakening in demand during the second quarter. First quarter deliveries had risen nearly 16 percent on the strength of a price advantage versus natural gas-fired electricity


Residual Fuel Oil Deliveries


Deliveries of "Other Oils"

generation, coupled with a surge in heating demand early in the year due to the unusual cold. For the second quarter, deliveries fell 1 percent as resid's price advantage over natural gas weakened.

Even June's marginal, 0.5 percent increase was apparently more the result of unusually weak deliveries a year ago than of the extremely hot weather this year. With temperatures at times surpassing 100°F in some Midwest and Mid-Atlantic cities, breaking dozens of daily-high records, the month as a whole averaged roughly 30 percent hotter in the Northeast than an already-unseasonably-warm June 1993. Even so, whatever effect this may have had on electric utility demand was not apparent in the month's weak residual fuel oil deliveries.

June's modest year-to-year increase in deliveries came about only because deliveries last June had sunk to 870 thousand B/D, their lowest monthly level in decades. If last June's deliveries had been more in line with the then-existing trend, this June's deliveries would have fallen about 15 percent.

Other Oils

PETROCHEMICAL FEEDS BOOST DEMAND. Deliveries of "other oils" grew strongly in the first half of 1994, contrasting with only-flat deliveries last year. Following the first quarter's 4.6 percent increase, the second quarter's deliveries continued at an even slightly higher rate. This put year-to-date growth for "other oils" at a brisk 4.8 percent.

Much of the first quarter's rise was the result of strong liquefied petroleum gas demand due to the extreme cold early this year. Deliveries of LPGs for January-March rose more than 8 percent, year to year, and accounted for four-fifths of the increase in "other oils" deliveries. The second quarter's growth, on the other hand, appears to be tied to rising demand for petrochemical feedstocks, which now account for about 40 percent of the "other oils" category and fully 10 percent of petroleum deliveries overall. Naphtha-based feedstocks, in particular, are reportedly experiencing stronger demand because of a current cost advantage over other feedstocks. Incremental feedstock demand for ethane, however, appears to have been weak in recent months.

SUPPLY

Production

CRUDE OIL OUTPUT CONTINUES TO FALL. Domestic crude oil prodution for the first half of 1994 fell 3.6 percent to 6.65 million B/D, its lowest six-month level in 36 years. Most of the decline was in the lower 48, were output fell 4.1 percent to 5.08 million B/D, its lowest half-year level since 1950. Current production in the lower 48 is little more than half the six-month peak of 9.54 million B/D reached in the latter part of 1970. Since then, the lower 48's decline has been partially offset by gains in Alaskan production. Though Alaskan production is now declining as well, it still accounts for nearly a quarter of domestic crude oil output.

In this year's first half, Alaskan production slipped 1.8 percent, or about 30 thousand B/D—only about a third the rate of the prior two years. Enhanced gas-handling facilities installed last summer as part of the GHX-II program have helped to at least temporarily forestall the natural decline of fields on the North Slope. The coming onstream of Point McIntyre late last year has also added to Alaskan output.

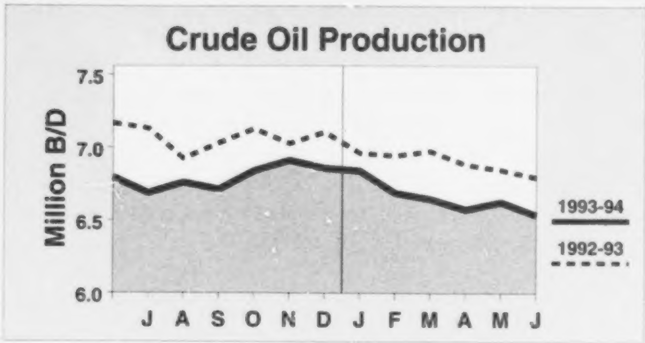
As a result of the decline in domestic output, the U.S. share of non-OPEC crude oil production has dropped from 25 percent of 37 million B/D ten years ago to less than 20 percent of roughly 35 million B/D currently. Excluding the former Soviet Union, where production has fallen especially dramatically in the past five years, the U.S. share of remaining non-OPEC output has shrunk from 35 percent to 25 percent.

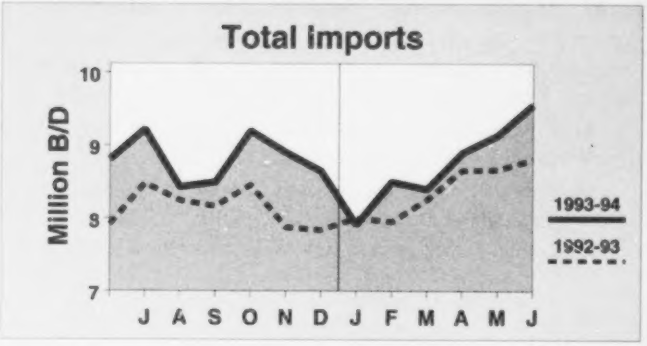
Meanwhile, natural gas liquids production finally turned positive in year-to-year comparisons in June, after showing declines for most of the first half. As oil prices have strengthened relative to natural gas prices over the past several months, the value of extracted NGLs, relative to their value when left in natural gas streams, has risen enough to encourage increased recovery. Nevertheless, for the first six months as a whole, natural gas liquids production still fell 4.5 percent or roughly 80 thousand B/D.

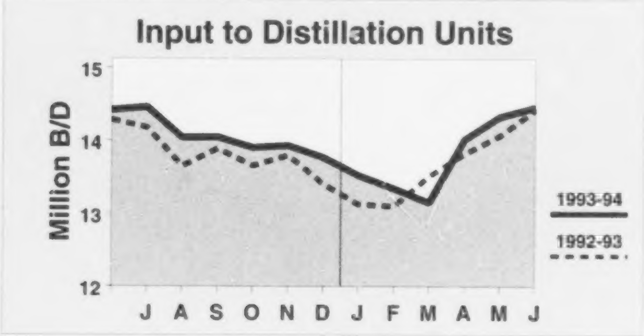
Imports

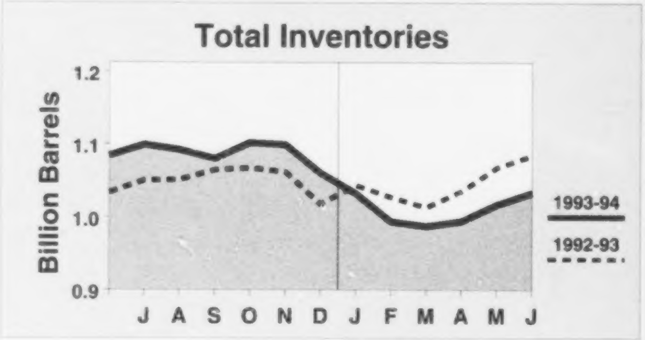
STOCK DRAW SOFTENS RISE IN IMPORTS. Total imports during the first half of 1994 did not reach an all-time high—but the recent underlying trend, adjusted for temporary inventory swings, has already passed the peak annual rate of imports reached in the late 1970s.

Despite strong growth in demand and the continued decline in domestic supplies, total imports in this year's first six months rose just 4.1 percent—less than half the rate that would have been needed to close the gap between consumption and supply. The difference springs from a net 150 thousand B/D draw on domestic inventories so far this year, compared with an average build of roughly 200 thousand B/D in recent prior years. That net draw on domestic inventories held imports to 8.73 million B/D, rather than a figure over 9 million B/D which would have otherwise been


Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

needed to meet domestic requirements if inventory patterns had followed the usual seasonal pattern. Thus, we estimate that the underlying trend in import needs has been growing at an annual rate of 9-10 percent.

Total imports as a percent of domestic deliveries amounted to 49.6 percent in the first half of 1994, and reached 52.9 percent in the second quarter, their highest quarterly level to date.

Product imports accounted for about four-fifths of the first half's overall increase, rising over 15 percent to 2.04 million B/D. This was the first time since 1990 that product imports have exceeded 2 million B/D for a six-month period. Gasoline imports alone accounted for nearly half the 272 thousand B/D rise in product imports for the first half, as arbitrage opportunities for shipments from Europe opened up late in the first quarter. For the half, gasoline imports amounted to over 350 thousand B/D, their highest level for a six-month period in four years and up 50 percent from a year ago. Imports of finished gasoline in June slipped to 345 thousand B/D from May's high of nearly 450 thousand B/D.

Imports of distillate fuel oil were up roughly 30 thousand B/D for the half to 222 thousand B/D, and imports of kerosine jet fuel were up by a similar volume to 110 thousand B/D. Residual fuel oil imports, reflecting the pattern of demand, rose over 135 thousand B/D for the first quarter to nearly half a million B/D, but fell to 326 thousand B/D for the second quarter.

Refinery Operations

AVERAGE UTILIZATION REACHES NEW HIGHS.

Refinery activity in 1994's first half continued the steady gains of 1993. Despite June's flat performance versus a year ago, input to distillation units for the first six months as a whole rose about 1 percent. The rise put inputs at nearly 13.8 million B/D, their highest first-half level since 1980. Utilization of operable capacity reached 91.6 percent for the first six months. This was second only to the 92.6 percent rate attained in last year's second half, a time when refinery activity tends to be seasonally higher. For the second quarter alone, utilization reached 94.6 percent, the highest for any quarter in decades.

Meanwhile, product slates continued to center on where demand growth has been the strongest—middle distillates. Second quarter distillate fuel oil production averaged almost 9 percent higher than a year ago after a nearly 7 percent gain in the first; kerosine jet fuel production, which had risen 1.1 percent in the first quarter, increased 5.8 percent in the second. Meanwhile, gasoline output (including blending downstream from refineries) has recovered somewhat in recent months from its more than 4 percent decline in the January-March period. Nevertheless, for the second quarter it still managed to only match year-ago levels, even with a 1 percent increase for June. Residual fuel oil output's first quarter rise of 1.4 percent was transformed into a 7.7 percent decline in the second, reflecting the weakening of demand in recent months.

Inventories

CRUDE STOCKS PULL DOWN THE TOTAL.

After falling 73 million barrels in the first quarter, total inventries recovered a little more than half of that decline in the second. But even so, inventories in recent years have normally risen, rather than fallen, over the first six months of the year. Thus, total stocks have dropped, on net, over 60 million barrels more than the average stock change for the first half.

Mainly because of lower stocks of crude oil, residual fuel oil, and unfinished oils, June's month-end inventory level of 1,033 was roughly 30 million barrels below the recent-year average. Crude stocks' 3 million barrel decline from end-of-May levels put them at 327 million barrels, about 20 million barrels below average for June. Stocks of unfinished oils fell 4 million barrels during June and ended the month about 15 million barrels below average for mid-year. Residual fuel oil stocks also fell slightly to 38 million barrels, their lowest level for any month in over five years.

Inventories of major light products, on the other hand, were at average to above-average levels. Gasoline stocks slipped 1 million barrels during June to 215 million barrels, a level close to average for mid-year. Distillate stocks rose 5 million barrels to 119 million barrels. Although most of this increase was in high- sulfur distillate, inventories of low-sulfur product still accounted for more than half of total distillate stocks. Distillate inventories at the end of June were nearly 10 million barrels above average for the month, but it is unclear, given the short history of low-sulfur diesel, how much of that represents additional working inventories necessitated by the needed to keep low and high-sulfur distillate segregated.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	June			Year-to-Date		
	1994[2]	1993[3]	% Change	1994[4]	1993[3]	% Change
Disposition:						
Total motor gasoline	7,766	7,700	0.9	7,437	7,310	1.7
Finished oxygenated	876	875[E]	0.1	1,474	1,392[E]	5.9
Finished reformulated	0	na	na	0	na	na
Finished other	6,890	6,825[E]	1.0	5,963	5,918[E]	0.8
Naphtha-jet	49	168	(70.8)	58	123	(52.9)
Kerosine-jet	1,566	1,362	15.0	1,457	1,332	9.4
Distillate fuel oil	2,950	2,863	3.0	3,271	3,080	6.2
≤ 0.05 percent sulfur	1,796	301[E]	496.7	1,711	351[E]	387.5
> 0.05 percent sulfur	1,154	2,562[E]	(55.0)	1,560	2,729[E]	(42.8)
Residual fuel oil	874	870	0.5	1,113	1,034	7.6
All other oils (including crude losses)	4,484	4,342	3.3	4,398	4,196	4.8
Reclassified[5]	-152	-209	na	-125	-171	na
Total domestic products supplied	17,537	17,096	2.6	17,609	16,904	4.2
Exports	900	900	0.0	913	1,032	(11.5)
Total disposition	18,437	17,996	2.5	18,522	17,936	3.3
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,538	6,795	(3.8)	6,653	6,900	(3.6)
Natural gas liquids	1,768	1,753	0.9	1,686	1,765	(4.5)
Other supply[6]	1,110	1,195	(7.1)	1,298	1,247	4.1
Total domestic supply	9,416	9,743	(3.4)	9,637	9,912	(2.8)
Imports:						
Crude oil (excluding SPR imports)	7,721	7,201	7.2	6,694	6,625	1.0
From Canada	961	911	5.5	949	817	16.2
All other	6,760	6,290	7.5	5,745	5,808	(1.1)
Products	1,837	1,604	14.5	2,039	1,767	15.4
Residual fuel oil	317	309	2.6	410	347	18.2
All other	1,520	1,295	17.4	1,629	1,420	14.7
Total imports	9,558	8,805	8.6	8,733	8,392	4.1
Total supply	18,974	18,548	2.3	18,370	18,304	0.4
Stock change, all oils	537	552	na	-152	368	na
Refinery Operations:						
Input to crude distillation units	14,455	14,415	0.3	13,805	13,675	1.0
Operable capacity	15,040	15,166	(0.8)	15,072	15,140	(0.5)
Refinery utilization[7]	96.1	95.1	na	91.6	90.3	na
Crude oil runs	14,311	14,129	1.3	13,619	13,421	1.5

	June 1994	May 1994	June 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	326.8	330.1	352.3	(1.0)	(7.2)
Unfinished oils	93.5	97.5	101.3	(4.1)	(7.7)
Total motor gasoline	215.0	216.5	221.3	(0.7)	(2.9)
Finished oxygenated	2.3	3.1	6.3	(25.8)	(63.5)
Finished reformulated	0.0	0.0	na	na	na
Finished other	177.1	175.6	177.9	0.9	(0.5)
Blending components	35.6	37.8	37.1	(5.8)	(4.0)
Naphtha-jet	2.0	2.0	4.1	0.0	(51.2)
Kerosine-jet	39.3	40.5	41.1	(3.0)	(4.4)
Distillate fuel oil	118.7	113.3	110.0	4.8	7.9
≤ 0.05 percent sulfur	61.1	59.6	15.0	2.5	307.3
> 0.05 percent sulfur	57.6	53.7	95.0	7.3	(39.4)
Residual fuel oil	38.5	39.1	45.7	(1.5)	(15.8)
All other oils	199.0	177.7[R]	208.2	12.0	(4.4)
Total all oils	1,032.8	1,016.7[R]	1,084.0	1.6	(4.7)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. **2**—Based on API estimated data converted to a monthly basis. **3**—Source: U.S. Energy Information Administration (including any adjustments). **4**—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). **5**—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. **6**—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. **7**—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	2nd Quarter 1994[3]	1993[2]	% Change
Disposition:			
Total motor gasoline	7,686	7,573	1.5
Finished oxygenated	927	945[E]	(1.9)
Finished reformulated	0	na	na
Finished other	6,759	6,628[E]	2.0
Naphtha-jet	59	131	(55.0)
Kerosine-jet	1,460	1,316	10.9
Distillate fuel oil	3,016	2,829	6.6
≤ 0.05 percent sulfur	1,757	298[E]	489.6
> 0.05 percent sulfur	1,259	2,531[E]	(50.3)
Residual fuel oil	982	992	(1.0)
All other oils (including crude losses)	4,337	4,133	4.9
Reclassified[4]	-144	-182	na
Total domestic products supplied	17,396	16,792	3.6
Exports	910	1,017	(10.5)
Total disposition	18,306	17,809	2.8
Supply:			
Domestic liquids production:			
Crude oil (including condensate)	6,581	6,841	(3.8)
Natural gas liquids	1,727	1,762	(2.0)
Other supply[5]	1,287	1,282	0.4
Total domestic supply	9,595	9,885	(2.9)
Imports:			
Crude oil (excluding SPR imports)	7,203	6,941	3.8
From Canada	937	856	9.5
All other	6,266	6,085	3.0
Products	1,994	1,767	12.9
Residual fuel oil	326	333	(2.1)
All other	1,668	1,434	16.3
Total imports	9,197	8,708	5.6
Total supply	18,792	18,593	1.1
Stock change, all oils	486	784	na
Refinery Operations:			
Input to crude distillation units	14,266	14,098	1.2
Operable capacity	15,085	15,152	(0.4)
Refinery utilization[6]	94.6	93.0	na
Crude oil runs	14,101	13,832	1.9

	2nd Quarter 1994[3]	1993[2]	% Change
Stocks (at quarter-end, in millions of barrels):			
Crude oil (excluding SPR stocks)	326.8	352.3	(7.2)
Unfinished oils	93.5	101.3	(7.7)
Total motor gasoline	215.0	221.3	(2.9)
Finished oxygenated	2.3	6.3	(63.5)
Finished reformulated	0.0	na	na
Finished other	177.1	177.9	(0.5)
Blending components	35.6	37.1	(4.0)
Naphtha-jet	2.0	4.1	(51.2)
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American Petroleum Institute
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Monthly Statistical Report

Finance, Accounting, and Statistics Department

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SUMMARY

In July, petroleum imports surpassed the previous all-time high reached seventeen years ago, and, for the first time ever, exceeded 10 million B/D. The 9.1 percent year-to-year jump, to 10.1 million B/D, represented the upper side of a wide, variable band around a level of imports more accurately reflected in the year-to-date average of almost 9 million B/D. Much of the additional imports last month ended up in domestic inventories. Total imports as a percent of domestic deliveries also reached a new, all-time high in July of 58 percent.

The previous high had been reached in early 1977, when imports briefly surged to just short of 10 million B/D from levels then more typically running around 8.5 million B/D. Comparing the domestic supply/demand balance now with then, it is notable that domestic petroleum consumption is roughly 1 million barrels per day *lower* than it was then, despite an increase in population of nearly 20 percent and growth in the production of goods and services on the order of 50 percent. But although domestic consumption declined, on net, between 1977 and 1994, domestic crude oil production declined even more—by roughly 1.5 million B/D. This has been despite increased production due to the development of major fields in Alaska, without which the decline in U.S. crude production would have been double that size.

In contrast with the surge in imports in July, domestic deliveries lagged behind recent trends and actually declined 0.6 percent versus a year ago. A substantial decline for residual fuel oil and smaller declines for gasoline and for "other oils" contributed to the decrease. Despite the month's weak deliveries, the strength of the economy and other indicators suggest that underlying growth in petroleum consumption has not slackened to any significant degree.

Domestic crude oil production fell 1.9 percent in July versus one year earlier. The drop of close to 130 thousand B/D was less than the average decline of more than 200 thousand B/D evident so far this year, due to an increase for Alaska. In Alaska, production rose 3.4 percent, or 50 thousand B/D from a one year earlier, but mainly because output then was depressed by installation work on the North Slope.

Input to crude distillation units in July slackened by 0.4 percent from a year ago. Even so, utilization remained strong at nearly 95 percent of reported capacity. Middle distillate output continued to grow, while, for gasoline, a combination of only-modest demand growth and strong gasoline imports contributed to a 1.9 percent decline in output of that product from last July.

July's substantial 31 million barrel increase in total inventories over the month continued the rebuilding of stocks after a sizable drawdown during the early part of this year. The build put total inventories at 1.065 billion barrels, still about 18 million barrels below the recent-year average for July. Despite July's surge in crude oil imports, crude stocks were essentially unchanged compared with June, at 326 million barrels—a level about 20 million barrels below typical levels for the end of July. Increases for product stocks, including 11 million barrels for distillate fuel oil, accounted for most of the rise in overall inventories.

PRODUCT SUPPLIED

Gasoline

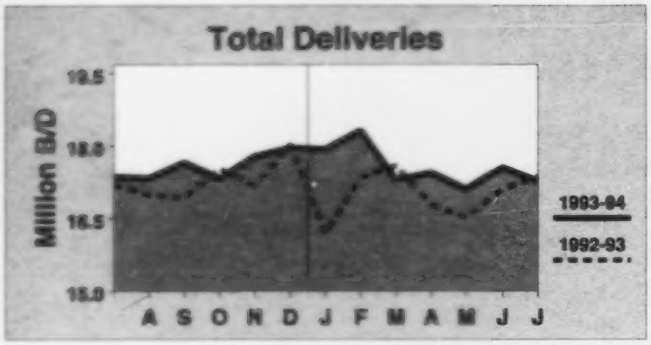
CONSUMPTION LIKELY STILL RISING. July's 0.7 percent decline in deliveries of motor gasoline contrasted with the generally upward trend evident for much of the first part of this year. Gasoline deliveries have not experienced a similar-sized decline in more than a year. However, given the continued growth of the economy and the most recent data on highway travel, it seems unlikely that the month's decline in deliveries corresponded with any major slackening in underlying demand.

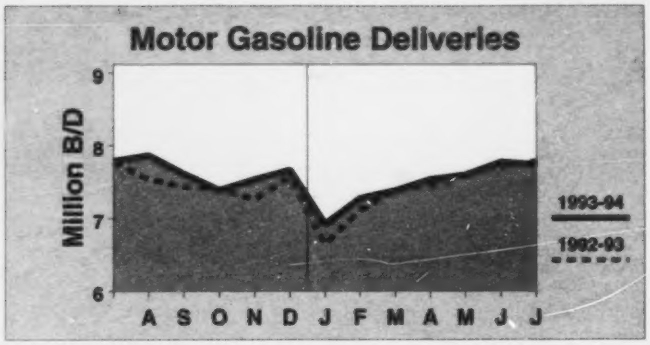
The most recent data on Gross Domestic Product put economic output at about 4 percent ahead of a year ago in the second quarter, and indications are that similar year-to-year economic performance continued into July. Data on highway travel, too, have shown no significant signs of slackening, at least through May, the latest month for which data are available. It is true that year-to-date growth in highway travel through May averaged only 2.4 percent, only marginally higher than for all of last year. But this was largely because of a slow start early in the year due to poor winter driving conditions. For March through May, miles traveled

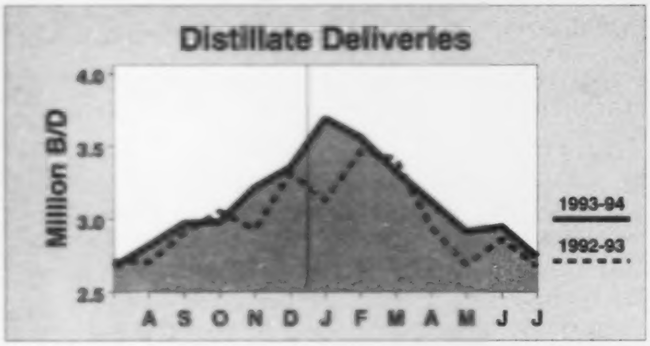
API ESTIMATES

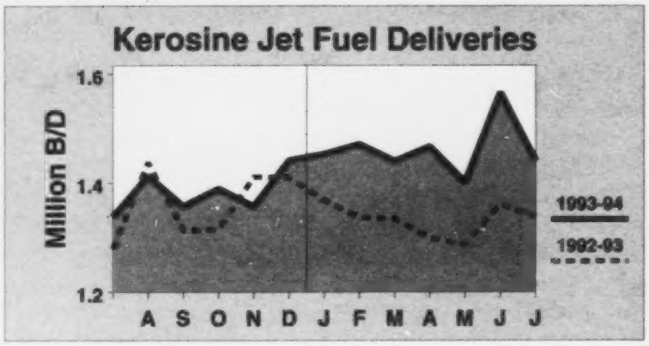
	JULY		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.3	(0.6)	17.5	3.4
Crude production	6.6	(1.9)	6.6	(3.3)
Total imports	10.1	9.1	8.9	4.9
Stocks (million bbl)	1,065	(3.1)	na	na

Published August 17, 1994


Total Deliveries


Motor Gasoline Deliveries


Distillate Deliveries


Kerosine Jet Fuel Deliveries

have averaged an unusually strong 3.8 percent. We estimate that highway travel in more recent months has still been growing at about a 3 percent rate, continuing to imply underlying growth in gasoline consumption of 1-1.5 percent.

Though July's year-to-year decline in deliveries contrasted with what underlying consumption is believed to have experienced, short-term fluctuations in gasoline deliveries growth have not been uncommon in the past. Over the past ten years, single-month growth has deviated from trend (as measured by a six-month moving average) by more than 2 percentage points about 40 percent of the time. Deviations of even 3 percentage points or more have occurred at an average rate of once or twice per year. Viewed in this context, July's decline in gasoline deliveries is unusual, but only moderately so.

Distillate Fuel Oil
DELIVERIES' GROWTH MODERATES IN JULY.

The strength in distillate fuel oil deliveries in the second quarter— which had witnessed year-to-year growth of about 6 percent—moderated in July. Deliveries rose only 2.5 percent for the month, their weakest year-to-year showing since March.

Nevertheless, if deliveries increases in recent prior months seemed a bit stronger than could be explained by trends in underlying demand, July's figure appears lower than what actual consumption growth is likely to have been. That growth we still estimate to be in the neighborhood of 4 to 5 percent. Highway freight demand appears to be continuing to grow robustly, pulling highway diesel demand with it. In addition, rail traffic registered a more than 7 percent increase for the month, only partly because of the effects on year-ago figures of last year's flooding in the Midwest.

As the difference between July's deliveries figures and estimated actual consumption demonstrate, the linkage between deliveries and consumption can be indirect and subject to lags and other factors. Highway diesel demand, for example, as measured by data collected by the Federal Highway Administration, has a noticeable seasonal component. According to this series, fuel usage in the summer months can run as much as 20 percent higher than in mid-winter.

Yet, a similar pattern has not been evident in roughly-corresponding data from the Energy Information Administration and API on deliveries from primary storage (what leaves refineries, pipelines, and major bulk terminals). Low-sulfur diesel, mandated for on-highway use as of last October, has been tracked separately from the rest of distillate fuel oil for over a year-and-a-half now. Yet this series, at least so far, has not shown any substantial seasonal variation. Rather, it has mostly remained in the 1.7 to 1.8 million B/D range since the requirement began late last year. The difference may be due to a number of factors, including shifts in the amount of product held in non-primary storage and use of low-sulfur diesel in some markets for other than on-highway use.

Kerosine Jet Fuel
TRAVEL GROWS, BUT WITH LITTLE EFFECT ON COMMERCIAL FUEL.

For the eighth consecutive month, deliveries of kerosine-jet fuel were higher for the current month than the same month in the previous year. In July, deliveries of jet-kero were 7.7 percent higher than the deliveries during July 1993. However, the rate of growth slackened somewhat from June's strong increase, and the July deliveries were running under expected trends.

Although the year-to-date deliveries of jet-kero are nearly 10 percent higher this year compared to last year, this is not an accurate indicator of the growth rate of underlying demand for commercial-use fuel. Despite the continued strong growth in the number of passenger miles flown by the airlines, fuel consumption has not kept pace with increased passenger traffic. In an effort to increase efficiency, airlines have worked to minimize fuel costs, which account for roughly 15 percent of a commercial airline's operating expenses.

As a result of the emphasis on greater efficiency, the load factor of passenger miles to available capacity has been higher relative to last year. During the first six months of the year air passenger traffic was 3.6 percent higher than during the same interval in 1993, while available seat miles were lower by 1 percent. In addition, the airlines are also curbing their costs by grounding less-efficient planes. The result of these measures has been a smaller increase in fuel consumption than in revenue passenger miles, with a trend of about a 1 percent growth in monthly commercial demand from year to year.

The remaining increase in monthly deliveries can be attributed to the effects of the military conversion from JP-4, a naphtha-based jet fuel, to JP-8, a kerosine based jet fuel. According to the Defense Fuel Supply Center, the April 1994 conversion to JP-8 at the bases on the East Coast and along the Gulf has resulted in additional demand averaging 90 thousand B/D. The earlier conversion to JP-8 at the military bases on the West Coast has added as much as 60 thousand B/D average demand for jet-kero. The actual average daily impact on deliveries has likely varied from month to month.

Residual Fuel Oil

WEAK DELIVERIES CONTINUE. July deliveries of residual oil were more than 10 percent lower than the July deliveries of the previous year. The current delivery level is the lowest for July in at least the last two decades, despite an uncommonly hot June and July and strong demand earlier in the year. Since February, the monthly demand for resid has dropped nearly 35 percent, compared to an average seasonal drop of about 15 percent in the same interval during the last five years.

The decline in July resid deliveries relative to last July is tightly linked to somewhat cooler weather and a change in the price differential between residual oil and natural gas. Both of these effects are particularly important on the East Coast, where utilities choose between these fuel types to meet seasonal demand. Although the Mid-Atlantic region and New England were 7 percent and 42 percent warmer, respectively, than the year before, the Southeast was more than 9 percent cooler. Unlike last year, the warm summer conditions in the Northeast did not lead to increased purchases of resid. During July, the price of high-sulfur resid rose from slightly below the cost per BTU provided by natural gas to more than 20 percent above, dampening utility demand for resid despite increased demand for electricity. The unfavorable differential in prices may account for most, if not all, of the 109 thousand B/D drop from last year's July deliveries.

The large swings in resid demand over the past year illustrate how large an influence can be due to fuel switching at utilities, which in the last three years, have represented between 30 percent and 40 percent of the national consumption of resid. Because utilities may switch fuels based on price changes more easily than other consumers of resid, deliveries to utilities tend to be more volatile than other deliveries, such as those to industry and vessel bunkering, which together make up nearly 50 percent of average annual demand.

Other Oils

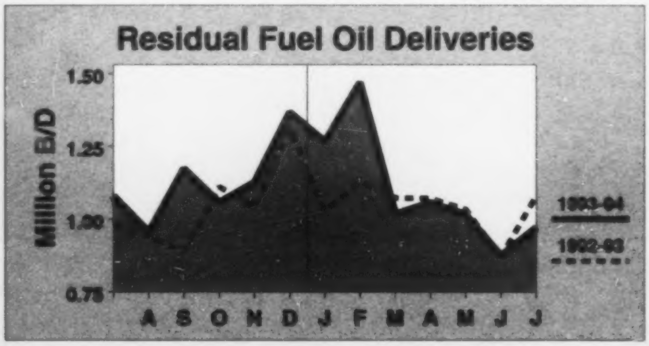
PREVIOUS GROWTH REVERSES IN JULY. Deliveries of "other oils" had grown nearly 5 percent in the first half of 1994—so July's 1.3 percent drop was a bit of a surprise. As with some of the major products, for which deliveries in July were likely weaker than actual underlying consumption, demand for "other oils" in July, we estimate, was still in positive territory.

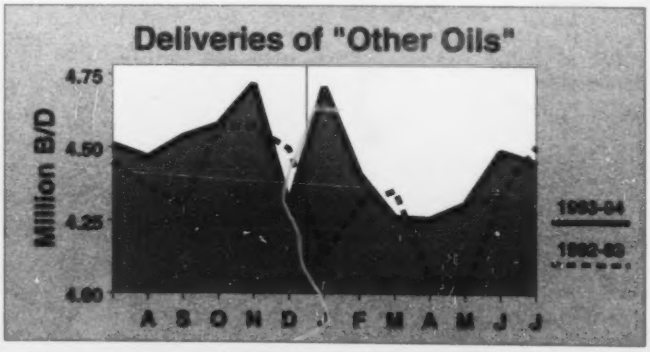
Petrochemical feedstock demand continues to be one of the major driving forces behind the growth in "other oils" demand. Deliveries of liquefied petroleum gases as a whole have been strong through much of this year. Though ethane deliveries taken alone have been down from last year because of less attractive economics compared with other feedstocks, butane has been relatively strong. Deliveries of naphtha-based feedstocks have been rising as well, and gasoil feedstocks seem to have picked up recently despite the higher oil prices of the past several months. Favorable values for co-products to ethylene production appears to be the reason.

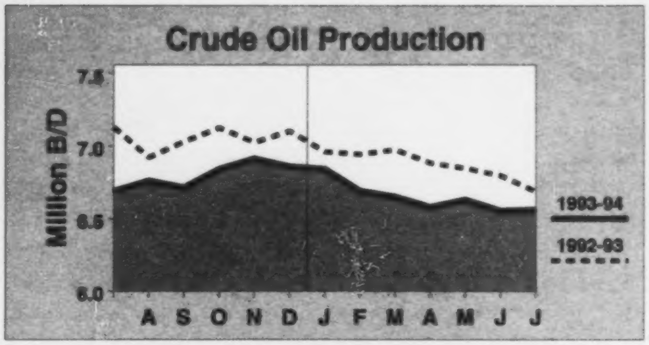
SUPPLY

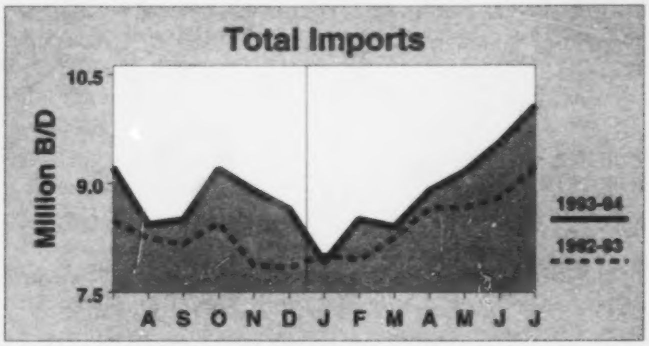
Production

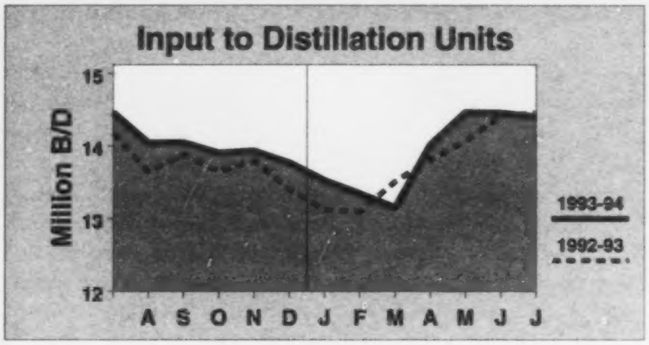
DROP FOR OIL DRAGS DOWN DRILLING ACTIVITY. Domestic crude oil production's decline in July of close to 130 thousand B/D, or 1.9 percent, was less than the average decline of more than 200 thousand B/D evident in the first half, mainly because of an increase for Alaska. However, much of Alaska's year to year gain was the result of depressed output last summer due to work on Phase 1 of the GHX-2 project to enhance gas-handling capability. Despite July's 3.4 percent, 50 thousand B/D increase in Alaskan production, output there still fell short of the 1.5 million B/D mark for the month. Modules for Phase 2,

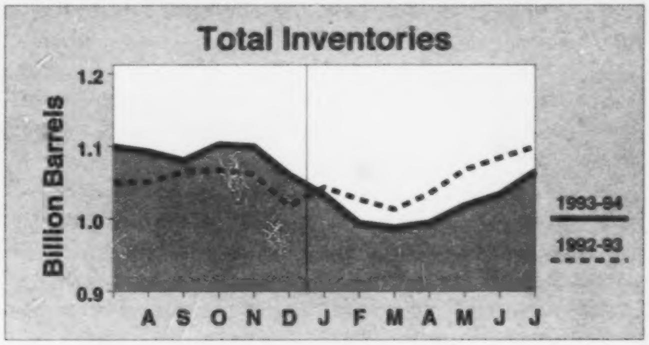





Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

barged 8,000 miles from the Gulf Coast, are due to arrive in August. For the lower 48, crude oil output fell 3.4 percent or close to 180 thousand B/D.

Drilling activity continued to decline in the second quarter because of a sharp drop in oil completions, according to the most recent API estimates. Total completions fell more than 15 percent versus the second quarter of 1993. With oil prices for much of the first half running well below year-ago levels, oil completions fell 28 percent for the quarter following a 13 percent decline in the first. The second quarter's natural gas completions, on the other hand, rose nearly 7 percent. Even with the increase, gas completions were only one half their level of the early 1980s—and oil completions over the most recent four quarters have amounted to only one fifth of their level of a little over a decade ago.

Imports

IMPORTS REACH AN ALL-TIME HIGH.

Surpassing the previous all-time high set seventeen years ago, petroleum imports in July, for the first time ever, exceeded 10 million B/D. The previous high, which had fallen slightly short of the 10 million B/D mark, occurred in February 1977. That high had been the result of a temporary surge from more typical levels averaging then around 8.5 million B/D.

In a similar way, this July's 9.1 percent year-to-year jump, to 10.1 million B/D, represented the upper side of a wide, variable band around a level of imports more accurately reflected in the year-to-date average of about 9 million B/D. Thus, much of the additional imports during July ended up in domestic inventories, and below-trend deliveries for the month only accentuated that result. Total imports as a percent of domestic deliveries also reached a new, all-time high of 58.3 percent for the month.

Among the interesting comparisons between today and seventeen years ago are the relative roles of consumption and crude oil production. The decline in crude oil production is well known. More surprising to some may be that domestic petroleum consumption is still roughly 1 million barrels per day *lower*, not higher, now than then, despite a population increase of nearly 20 percent and growth in the production of goods and services on the order of 50 percent.

Following the 1970s' peak in imports, petroleum demand actually declined as a result of the substantially higher prices of the late 1970s and early 1980s, as well as the sluggish economic growth of the period. At the same time, the coming on stream of North Slope Alaskan production beginning in late 1977 also reduced the need for imports. As a result, imports sank to an average of about 5 million B/D in the early to mid-1980s. Since then, they have generally trended upwards to their level of close to 9 million B/D so far this year.

The reason, then, that the trend in imports now has been running higher than seventeen years ago is that, although domestic consumption declined, on net, between 1977 and 1994, domestic crude oil production declined even more—by roughly 1.5 million B/D. This was despite the increased output from Alaska, without which the drop in U.S. crude production would have been double the actual decline.

Volumetrically, most of July's year-to-year increase in imports was in the form of crude, which reached a new high of over 7.9 million B/D. But product imports also surged in July versus a year ago and versus prior months, rising 10.4 percent to over 2.1 million B/D.

Finished gasoline imports were up roughly 150 thousand B/D to nearly 450 thousand B/D, putting them close to April-May levels of around 460 thousand B/D, after a dip in June. Distillate fuel oil and kerosine jet fuel imports, in contrast, were down from recent prior months and only about even with a year ago. Residual fuel oil imports, reflecting July's unusually weak deliveries, fell about 60 thousand B/D to an unusually low 278 thousand B/D. For liquefied petroleum gases, imports were up strongly in July, rising nearly 70 thousand B/D to 243 thousand B/D versus a year ago.

Refinery Operations

INPUTS FALL SLIGHTLY FROM LAST JULY. Input to crude distillation units in July slackened by 0.4 percent from a year ago. Even so, utilization remained strong at nearly 95 percent of reported capacity, comparing closely with with May's 95.3 percent and June's 96.1 percent.

Gasoline yields continued to be weak relative to other products, reflecting continued competition from gasoline imports along with the fact that demand growth for this product has been the slowest among the major products. As a consequence, production of gasoline, including that blended downstream from refineries, fell 1.9 percent versus last July.

Middle distillate yields moderated some in July from recent prior months. Nevertheless, distillate fuel oil output still rose a reasonably strong 4.1 percent and kerosine jet fuel production, 3.9 percent. Residual fuel oil output increased 1.7 percent despite the extraordinarily weak deliveries of the past several months, reducing the role of resid imports in July even further.

Inventories

TOTAL STOCKS RISE SUBSTANTIALLY. The recent rebuilding in total inventories, following a sizable drawdown during the early part of this year, continued even more strongly in July. Total petroleum inventories rose an unusually large, 31 million barrels between the end of June and the end of July—more than double last year's build and about 10 million barrels more than their historical average increase for the month. The build put total inventories at 1.065 billion barrels, still about 18 million barrels below the recent-year average for July.

Despite July's surge in crude oil imports, crude stocks were essentially unchanged compared with June, at 326 million barrels—a level about 20 million barrels below typical levels for the end of July. Product stocks accounted for most of the rise, with about 11 million barrels of that a more-or-less typical gain for distillate fuel oil. Much of the remainder was estimated to be in stocks of "other oils".

Distillate fuel oil's increase put month-end stocks of that product at 130 million barrels, 9 million barrels ahead of a year ago. Thus, distillate inventories continued their pattern of the past five months of running 2 to 10 million B/D above year-ago levels. Gasoline stocks fell 4 million barrels to 211 million barrels, a level 6 million barrels less than average for the month.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	July 1994[2]	July 1993[3]	July % Change	Year-to-Date 1994[4]	Year-to-Date 1993[3]	Year-to-Date % Change
Disposition:						
Total motor gasoline	7,733	7,785	(0.7)	7,456	7,380	1.0
Finished oxygenated	781	842[E]	(7.2)	1,321	1,311[E]	0.8
Finished reformulated	0	na	na	0	na	na
Finished other	6,952	6,943[E]	0.1	6,135	6,069[E]	1.1
Naphtha-jet	97	127	(23.6)	64	124	(48.4)
Kerosine-jet	1,441	1,338	7.7	1,462	1,333	9.7
Distillate fuel oil	2,740	2,674	2.5	3,184	3,021	5.4
≤ 0.05 percent sulfur	1,695	318[E]	433.0	1,706	347[E]	391.6
> 0.05 percent sulfur	1,045	2,356[E]	(55.7)	1,478	2,674[E]	(44.7)
Residual fuel oil	970	1,079	(10.1)	1,092	1,040	5.0
All other oils (including crude losses)	4,448	4,506	(1.3)	4,410	4,240	4.0
Reclassified[5]	-169	-152	na	-130	-168	na
Total domestic products supplied	17,260	17,357	(0.6)	17,538	16,970	3.4
Exports	935	1,001	(6.6)	912	1,027	(11.2)
Total disposition	18,195	18,358	(0.9)	18,450	17,997	2.5
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,560	6,688	(1.9)	6,641	6,869	(3.3)
Natural gas liquids	1,690	1,741	(2.9)	1,685	1,762	(4.4)
Other supply[6]	894	1,194	(25.1)	1,214	1,239	(2.0)
Total domestic supply	9,144	9,623	(5.0)	9,540	9,870	(3.3)
Imports:						
Crude oil (excluding SPR imports)	7,928	7,289	8.8	6,900	6,722	2.7
From Canada	957	991	(3.4)	948	842	12.6
All other	6,971	6,298	10.7	5,952	5,880	1.2
Products	2,131	1,930	10.4	2,029	1,790	13.4
Residual fuel oil	278	337	(17.5)	382	345	10.7
All other	1,853	1,593	16.3	1,647	1,445	14.0
Total imports	10,059	9,219	9.1	8,929	8,512	4.9
Total supply	19,203	18,842	1.9	18,469	18,382	0.5
Stock change, all oils	+1,008	+484	na	+19	+385	na
Refinery Operations:						
Input to crude distillation units	14,405	14,458	(0.4)	13,912	13,790	0.9
Operable capacity	15,175	15,198	(0.2)	15,106	15,148	(0.3)
Refinery utilization[7]	94.9	95.1	na	92.1	91.0	na
Crude oil runs	14,261	14,136	0.9	13,727	13,525	1.5

	July 1994	June 1994	July 1993	% Change From Month Ago	% Change From Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	326.4	325.9[R]	351.9	0.2	(7.3)
Unfinished oils	95.5	93.5	102.2	2.1	(6.6)
Total motor gasoline	210.7	215.0	214.6	(2.0)	(1.8)
Finished oxygenated	2.9	2.3	5.7	26.1	(49.1)
Finished reformulated	0.0	0.0	na	na	na
Finished other	171.6	177.1	171.1	(3.1)	0.3
Blending components	36.2	35.6	37.8	1.7	(4.2)
Naphtha-jet	1.4	2.0	3.9	(30.0)	(64.1)
Kerosine-jet	40.6	39.3	42.7	3.3	(4.9)
Distillate fuel oil	129.7	118.7	120.7	9.3	7.5
≤ 0.05 percent sulfur	66.4	61.1	21.0	8.7	216.2
> 0.05 percent sulfur	63.3	57.6	99.7	9.9	(36.5)
Residual fuel oil	37.9	38.5	42.5	(1.6)	(10.8)
All other oils	222.3	200.3[R]	220.5	11.0	0.8
Total all oils	1,064.5	1,033.2[R]	1,099.0	3.0	(3.1)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. **2**—Based on API estimated data converted to a monthly basis. **3**—Source: U.S. Energy Information Administration (including any adjustments). **4**—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). **5**—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. **6**—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. **7**—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

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Washington, D.C. 20005

Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 8
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SUMMARY

Total deliveries' growth recovered in August after July's decline, rising 1.8 percent versus one year earlier. This suggests that whatever weakness there may have been in July's deliveries was short-lived, and that the underlying growth in consumption has been continuing. Even including July's slight decline, over the past five months growth in total deliveries has still averaged about 2.5 percent, more or less in line with estimated consumption.

Although gasoline deliveries' increase of 0.5 percent for the month was quite modest and followed an even-weaker July, other indicators suggest that gasoline consumption is still rising at a slightly higher rate. For distillate, July's only-modest growth in deliveries strengthened to 5.4 percent in August. Deliveries of kerosine jet fuel rose nearly 8 percent in August, though the increase was essentially attributable to the military fuel switchover rather than actual demand growth for aviation fuels overall. Residual fuel oil deliveries rose 1.1 percent.

August's imports slipped marginally from July's record high. But, at 9.9 million B/D, they still exceeded the estimated underlying need for imports by roughly 1 million B/D. As a result, domestic petroleum inventories rose for the second month by a larger-than-average amount, bringing the total increase in domestic inventories over the past two months to about 55 million barrels—about 45 million barrels more than average. Product imports, particularly for gasoline, were strong in August. Product imports rose over 25 percent to 2.24 million B/D, their highest August level in six years. Imports of finished gasoline of more than half a million B/D were boosted by continued incremental imports from Europe substituting at the margin for domestic gasoline refinery output.

Despite the rise in total stocks, crude stocks fell 5 million barrels to 322 million barrels, 20 million barrels below the average for August and near the bottom of the range of the past several years. Gasoline inventories fell 5 million barrels to 206 million barrels, a level not far below the recent-year average for August. Distillate stocks rose 6 million barrels to 136 million barrels, 10 million above average. However, the requirement to keep low and high sulfur distillates segregated in storage and transportation has likely raised minimum operating inventories, though to what extent is unknown.

For August, input to distillation units increased 3 percent over year-ago levels to nearly 14.5 million B/D, its fifth month in a row at over 14.4 million B/D. For the summer's peak activity months of June through August, utilization has averaged 95.3 percent of reported capacity, up a full percentage point from one year earlier and the highest for the three-month period since at least 1975, when monthly utilization data was first collected.

Crude oil production continued to decline. Nationally, crude production dropped 2.9 percent from August to August, compared to an average 3.8 percent annual decrease in the second quarter. In Alaska, crude oil production was down by roughly 30 thousand B/D, or 2.0 percent, from last August.

PRODUCT SUPPLIED

Gasoline

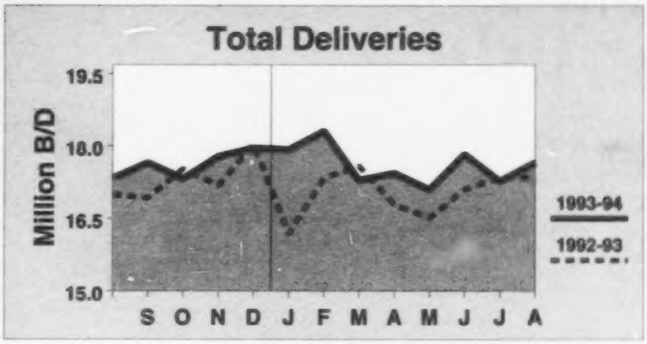
DEMAND GROWS WITH MORE HIGHWAY TRAVEL. Although gasoline deliveries' increase of 0.5 percent for the month was quite modest and follwed an even-weaker July, other indicators suggest that gasoline consumption is still rising at a higher rate closer to 1-1.5 percent.

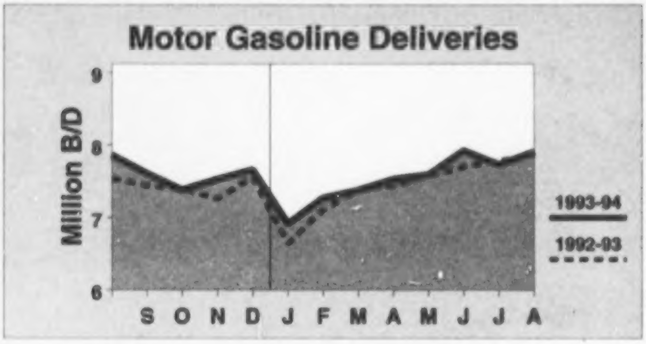
For one, the economy is still doing well versus a year ago, and growth in highway travel, at least through June, has been holding up as well. The latest Federal Highway Administration data show that highway travel rose 3.1 percent for that month and a similar amount for the second quarter as a whole, with no real signs of slowing. We estimate that this rate of growth in travel is continuing and that, after a partial offset for fuel efficiency, gasoline consumption is still rising at about a 1.5 percent rate. This is essentially the same rate of growth in deliveries as in the second quarter, according to recently-released monthly data from the Energy Information Administration. EIA's monthly data show a 1.4 percent increase in gasoline deliveries for the second quarter, essentially confirming API's original estimate of 1.5 percent for the same period.

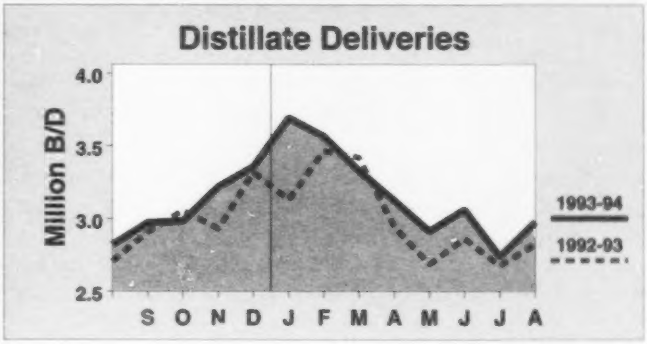
API ESTIMATES

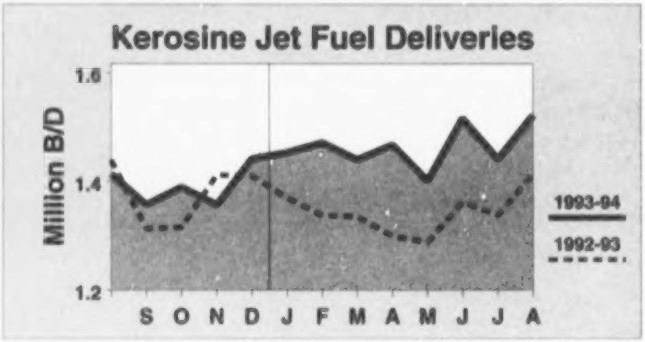
	AUGUST		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.6	1.8	17.6	3.4
Crude production	6.6	(2.9)	6.6	(3.3)
Total imports	9.9	17.2	9.0	6.0
Stocks (million bbl)	1,080	(1.1)	na	na

Published September 14, 1994


Total Deliveries


Motor Gasoline Deliveries


Distillate Deliveries


Kerosine Jet Fuel Deliveries

Oxygenated gasoline accounted for 8 percent of deliveries in August and averaged 10 percent for the peak summer driving season (June-August). This was up from a 7 percent share last summer, but well below levels experienced in the wintertime peak oxygenate season. Last January, for example, oxygenated gasoline accounted for a substantial, 36 percent of deliveries, or over 2.5 million B/D.

Distillate Fuel Oil

COMMERCIAL GROWTH STRENGTHENS DELIVERIES. After only a modest increase in July, deliveries of distillate fuel oil rose a stronger 5.4 percent in August. Despite the sometimes-volatile nature of single-month changes, strong growth in distillate demand so far in 1994 has been clearly evident in the year-to-date rise in deliveries of about 6 percent. Perhaps 1 percent of that was due to the severe cold early in the year, which had an impact not only on heating oil demand but on electric utility consumption of diesel in peaking units.

The remainder of distillate's increase is squarely in the realm of economic growth, and transportation demand in particular. So far this year, manufacturers' sales have risen about 7 percent versus last year, even after adjusting for inflation, according to Commerce Department data. Wholesale trade has risen about 4 percent, and retail trade, 6-7 percent. All of these suggest strong growth in the demand for transportation services, including highway diesel. Demand for rail services has also grown rapidly in 1994, with year-to-date ton-miles up 8 percent versus last year. The growth in rail traffic has been even higher more recently—12 to 13 percent for August—partly because of the problems caused a year ago by flooding in the Midwest.

August's deliveries of low-sulfur distillate returned to a level even higher than June's nearly 2 million B/D, after slipping to 1.7 million B/D in July. Meanwhile, deliveries of high-sulfur distillate continued at around 1 million B/D as they have since the end of the last heating season. Although some filling of heating oil storage continues through the summer, past years' data suggest that deliveries of heating oil have not usually picked up until September or October.

Kerosine Jet Fuel

DEFENSE CONVERSION CAUSES HIGH DEMAND. Defense conversion and sustained commercial airline demand have led to record levels of jet kerosine deliveries, although the underlying pattern of growth is not as strong as the high delivery figures suggest. In August, deliveries of jet kero were more than 7 percent higher than the deliveries in August of 1993. For the year to date, cumulative deliveries are 9 percent greater than deliveries during the same interval in 1993.

The increase in the year to date deliveries are the result of unusual, non-recurring events rather than long-term changes in demand. This year's record high levels of jet kero deliveries can be attributed mainly to two factors: the blending of jet fuel with diesel during the unusually cold earlier months of the year, and the recent conversion of military aircraft from a naphtha-based fuel to a kerosine-based fuel. After the conversion of military aircraft stationed in the East Coast and Gulf States to jet kero was completed in early June, demand for jet kero was expected to average more than 150 thousand B/D more than before the conversion process began. Final demand for jet kero has risen only an average of 140 thousand B/D for June, July, and August, compared to the same months in 1993. Since this change closely corresponds to the expected effect of military conversion, it suggests that other sources of demand have been relatively static.

The major source of demand for jet kero is still the commercial airlines, which account for more than 1 million B/D of total deliveries. As an industry, airlines have been reducing the total miles flown while increasing the total number of revenue passenger miles. While total revenue miles have been increased by nearly 4 percent during the year to date compared with the same interval in 1993, the increase has been higher in the last three months, and currently the total revenue miles are growing between 6 and 8 percent. At the same time, the total number of available passenger miles has been shrinking, and for the year to date the airlines have flown nearly 1 percent less total miles than they flew in 1993. The ratio of revenue passenger miles to total available passenger miles for the year is currently 66 percent, compared to an average load ratio of 62.1 percent over the last 10 years, and exceeding a post-war high of 66.1 percent set in 1951. Higher load ratios, coupled with a continued emphasis on fuel efficiency, has curbed growth in commercial airline fuel consumption despite increases in the numbers of passengers flying.

Residual Fuel Oil

RESID GROWS DESPITE PRICE DIFFERENTIAL. An unfavorable differential between the prices for residual oil and natural gas has led to the third consecutive month of slack residual oil deliveries of less than 1 million B/D. In August, resid deliveries were 1 percent more than the deliveries of August 1993. Although the cumulative monthly deliveries through August have been slightly higher in 1994 than in 1993, this is due to the high demand for resid linked to the unusually cold weather earlier in the year, as well as a favorable resid-to-natural-gas price differential. During the summer months of June, July and August, deliveries of resid were 3 percent lower in 1994 than in 1993. In contrast, electric power generation was 1 percent higher along the East Coast, where electric utility demand for resid is concentrated.

The reduction in resid deliveries during a period of increased demand for electricity is the mainly result of a change in the differential of the relative prices for resid and natural gas, which many utilities may use as a substitute fuel source to meet peak demands. In August of 1993, the cost of energy from resid was 10 percent less expensive than that of natural gas. By the beginning of August, 1994, the price differential had reversed and the cost per BTU for resid was now 20 percent greater than the cost per BTU for natural gas. The effect of the new price differential has been to discourage the use of resid by utilities to meet peak loads brought on by summer cooling demands.

Thus, the relatively cool weather that predominated along the East Coast in August—there were 30 percent less cooling days in New England and the Mid-Atlantic States, and more than 6 percent less cooling days in the Southeast, than there were in August of last year—seemed to have little effect on either electrical generation, or deliveries of resid. Given the weak demand from electrical utilities and the unfavorable price differential with respect to natural gas, August deliveries are higher than estimated consumption by as much as 90 thousand B/D.

Other Oils

DECREASED DELIVERIES CONTRAST WITH STRONG SECOND QUARTER. July's decline in deliveries of "other oils" continued in August, though at a more modest 1 percent rate. The declines are somewhat surprising after a first half that had experienced reasonably strong growth for this category of petroleum products. Second quarter data now available by product show that, while much of the 4.6 percent growth in the first quarter was concentrated in liquefied petroleum gases, the second quarter's 5.4 percent growth covered most of the products in the "other oils" category. For LPGs, despite a second quarter decline for ethane alone, deliveries rose 95 thousand B/D or over 6 percent because of strong increases for propane and butane. Deliveries of naphtha-based petrochemical feedstocks rose about 40 thousand B/D and gasoil feedstocks rose about 20 thousand B/D, for a combined increase of over 10 percent. Deliveries of petroleum coke, asphalt, and lube oils rose as well.

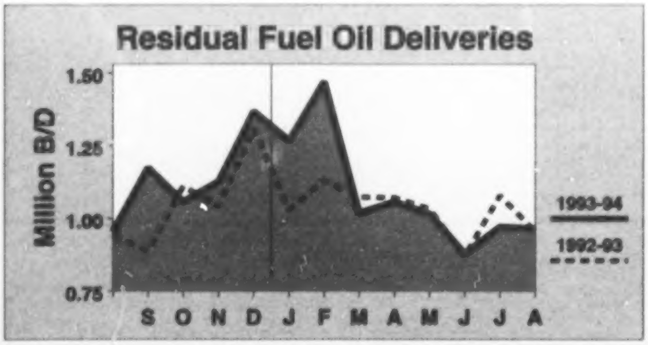
Over the longer term, petrochemical feedstock demand has been one of the major forces behind growth for "other oils". Deliveries over the past five years have risen about 200 thousand B/D, with deliveries of ethane, gasoil, and naphtha-based feedstocks accounting for most of the rise.

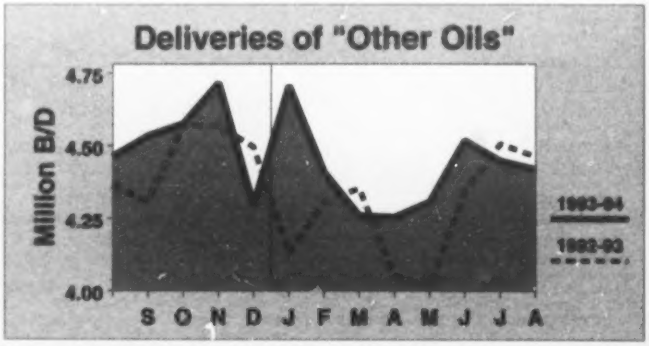
SUPPLY

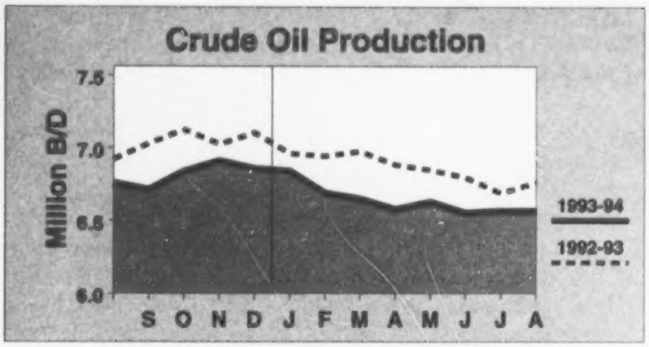
Production

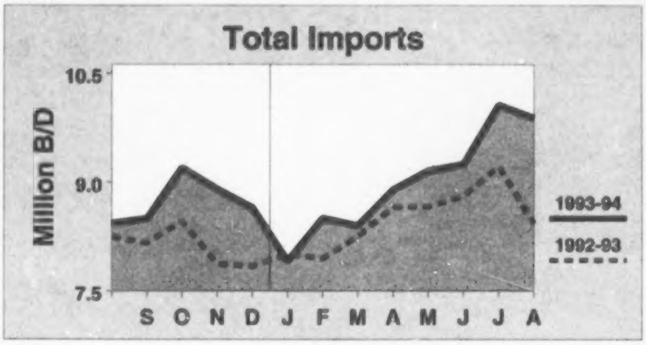
OUTPUT LOWER; OFF-SHORE SHARE GROWS. Crude oil production continued to decline, but relatively more slowly than in the first half of the year. In August, Alaskan crude oil production was down by only 30 thousand B/D, or 2.0 percent, from last August. Nationally, crude production dropped 2.9 percent from August to August, compared to an average 3.6 percent annual decrease in the first half. Nevertheless, August's decrease in crude oil production was greater than July's relatively modest drop of 1.9 percent, which was at least partially due to the abnormally low Alaskan production of July, 1993.

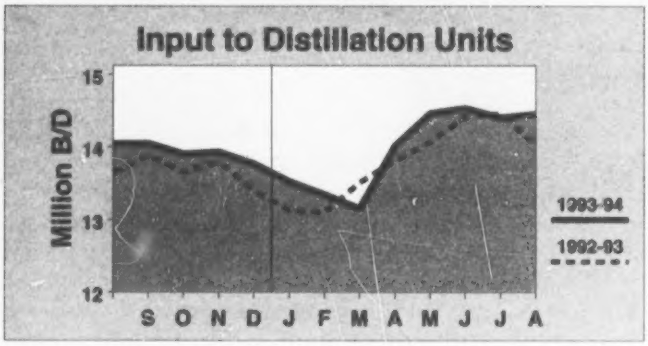
In recent years, the share of crude oil production from offshore operations has been slowly growing. In 1992, offshore production was roughly 17 percent of the total US production. By 1993, off-

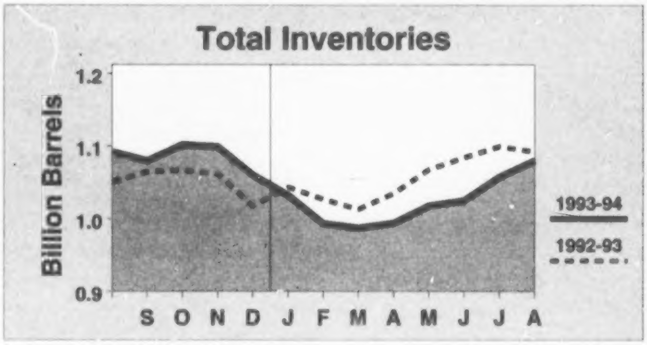












shore production had increased to 18.5 percent, and in the first quarter of 1994, offshore production accounted for over 19 percent of total production. In 1993, offshore production rose by more than 2 percent, while total production fell by 4.7 percent, and on-shore production fell by over 6 percent.

The gradual shift in production has been accompanied by a change in the composition of known domestic crude oil reserves. Since 1984, offshore reserves have held relatively constant, while the total US reserves have fallen more than 11 percent. In 1993 alone, total reserves fell by 3.3 percent, while offshore reserves increased by 6.6 percent, due to extensions of producing fields and the find of an estimated 313 million barrel field in the Gulf of Mexico. The increase in offshore production and reserves reflect the application of technological improvements in both exploration and drilling, which allow new fields to be developed at depths of more than 2000 feet.

Imports

IMPORTS REMAIN HIGH, EXCEEDING NEEDS.

August's imports slipped from July's record high but, at 9.9 million B/D, still exceeded the estimated underlying need for imports by roughly 1 million B/D, as evidenced by the month's larger-than-average build in domestic petroleum inventories. Many of the swings in imports over this year have been tied to shifts in domestic inventories. Imports in the first quarter of 1994 had been 8.3 million B/D, less than the roughly 9 million B/D estimated to be needed to fill the gap between demand and domestic supply, thus bringing about a net draw on domestic inventories. Since then imports have risen, and in the past several months have actually been running above current requirements. As a result, over the past two months of strong imports, domestic inventories have been rebuilt by about 55 million barrels, or about 45 million barrels more than average. As for crude oil imports, August's declined from July's record 7.9 million B/D to 7.6 million B/D, but were still up 15 percent from a year ago.

Product imports rose over 25 percent, or 455 thousand B/D, to 2.24 million B/D, their highest August level in six years. Strong imports of finished gasoline, which at 520 thousand B/D, reached their highest monthly level in more than three years, were a major contributor to the increase as incremental imports from Europe continued to substitute at the margin for domestic gasoline refinery output. For the year so far, imports of finished gasoline have been averaging over 400 thousand B/D, compared with typical annual levels in recent past years of 250 to 300 thousand B/D.

Country-specific data, available through June, show that gasoline imports from Europe rose by 110 thousand B/D between the first and second quarters, from 80 thousand B/D to 190 thousand B/D. Although this was the main contributor to the increase in finished gasoline imports from 292 thousand B/D in the first quarter to 466 thousand B/D in the second, Western Hemisphere imports also rose. Imports from the Americas (primarily the Virgin Islands, Canada, Venezuela, and Brazil) rose about 60 thousand B/D, from 203 thousand B/D in the first quarter to about 264 thousand B/D in the second.

Meanwhile, distillate imports rose about 40 thousand B/D from below-trend levels a year ago. Imports of residual fuel oil, on the other hand, continued to be squeezed between low domestic demand and continued supply from domestic refineries. They sank to 311 thousand B/D, down about 75 thousand B/D from a year ago. Imports of kerosine jet fuel recovered somewhat from July's lower level of 75 thousand B/D, but at 97 thousand B/D were still down from the first half's unusually strong level of around 115 thousand B/D.

Refinery Operations

INPUTS GROW UTILIZATION HIGH.

For August, input to distillation units increased 3 percent over year-ago levels to nearly 14.5 million B/D, its fifth month in a row at over 14.4 million B/D. For the summer's peak activity months of June through August, utilization has averaged 95.3 percent of reported capacity, up from 94.3 percent one year earlier and the highest for the three-month period since monthly utilization data began being collected in 1975.

As in recent prior months, increases in refinery activity did not necessarily translate into increases in gasoline production because of higher gasoline imports than a year ago. Output of finished gasoline slipped 0.4 percent versus one year earlier in August. So far this year, domestic output of gasoline has fallen nearly 190 thousand B/D, with higher imports of finished gasoline making up much of the difference. Reduced exports (which have traditionally been small in any case) and draws on domestic inventories kept supplies in balance with moderately higher deliveries.

Output of middle distillates, however, continued to surge, with distillate fuel oil production rising 8 percent to more than 3.3 million B/D for August—a level that traditionally has only been reached during the peak winter demand season. Production of kerosine jet fuel rose 20 percent. The increases for distillate and kero jet together boosted output of middle distillates by half a million B/D from last August. Production of residual fuel oil rose 10 percent, but still amounted to not much more than 800 thousand B/D.

Inventories

TOTAL STOCKS RISE AS CRUDE STOCKS DECLINE.

Going by the experience in recent previous Augusts, there has been no clear direction for inventory changes for the month. This August, however, total inventories rose over 22 million barrels compared with the end of July. This, combined with July's above-average increase, took total inventories to a level approaching the average of recent Augusts for the first time this year. Crude oil inventories nevertheless fell 5 million barrels to 322 million barrels, 20 million barrels below the average for August and near the bottom of the range of the past several years.

For the major products, gasoline inventories fell 5 million barrels to 206 million barrels, a level not far below the recent-year average for August. Distillate stocks rose 6 million barrels to 136 million barrels, 10 million barrels above the recent-year average. However, the requirement to keep low and high sulfur distillates segregated in storage and transportation has likely raised minimum operating inventories, though to what extent is unknown.

August's increase for distillate stocks was essentially all in the high-sulfur category. Inventories of high-sulfur distillate, the category into which heating oil falls, have risen about 24 million barrels since the end of the heating season last spring. Inventories of low-sulfur diesel declined slightly in August from July levels but were still at close to the highest level since the on-highway requirement went into effect last October.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	August 1994[2]	August 1993[3]	August % Change	Year-to-Date 1994[4]	Year-to-Date 1993[3]	Year-to-Date % Change
Disposition:						
Total motor gasoline	7,905	7,864	0.5	7,533	7,442	1.2
Finished oxygenated	601	739[E]	(18.7)	1,229	1,239[E]	(0.8)
Finished reformulated	0	na	na	0	na	na
Finished other	7,304	7,125[E]	2.5	6,304	6,203[E]	1.6
Naphtha-jet	51	101	(49.5)	64	121	(47.1)
Kerosine-jet	1,521	1,413	7.6	1,463	1,343	8.9
Distillate fuel oil	2,972	2,820	5.4	3,171	2,995	5.9
≤ 0.05 percent sulfur	1,978	464[E]	326.3	1,759	361[E]	387.3
> 0.05 percent sulfur	994	2,356[E]	(57.8)	1,412	2,634[E]	(46.4)
Residual fuel oil	965	955	1.1	1,076	1,029	4.6
All other oils (including crude losses)	4,419	4,463	(1.0)	4,414	4,270	3.4
Reclassified[5]	-185	-284	na	-134	-183	na
Total domestic products supplied	17,648	17,332	1.8	17,587	17,017	3.4
Exports	895	829	8.0	906	1,002	(9.6)
Total disposition	18,543	18,161	2.1	18,493	18,019	2.6
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,563	6,758	(2.9)	6,632	6,855	(3.3)
Natural gas liquids	1,730	1,747	(1.0)	1,687	1,760	(4.2)
Other supply[6]	1,095	997	9.8	1,243	1,208	2.9
Total domestic supply	9,388	9,502	(1.2)	9,562	9,823	(2.7)
Imports:						
Crude oil (excluding SPR imports)	7,637	6,641	15.0	6,947	6,712	3.5
From Canada	935	966	(3.2)	948	858	10.5
All other	6,702	5,675	18.1	5,999	5,854	2.5
Products	2,244	1,789	25.4	2,065	1,790	15.4
Residual fuel oil	311	387	(19.6)	362	350	3.4
All other	1,933	1,402	37.9	1,703	1,440	18.3
Total imports	9,881	8,430	17.2	9,012	8,502	6.0
Total supply	19,269	17,932	7.5	18,574	18,325	1.4
Stock change, all oils	726	-229	na	81	306	na
Refinery Operations:						
Input to crude distillation units	14,455	14,040	3.0	13,991	13,822	1.2
Operable capacity	15,175	15,140	0.2	15,130	15,147	(0.1)
Refinery utilization[7]	95.3	92.7	na	92.5	91.3	na
Crude oil runs	14,363	13,844	3.8	13,815	13,566	1.8

	August 1994	July 1994	August 1993	% Change From Month Ago	% Change From Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	321.8	326.4	335.5	(1.4)	(4.1)
Unfinished oils	97.2	95.5	107.5	1.8	(9.6)
Total motor gasoline	206.2	210.7	202.0	(2.1)	2.1
Finished oxygenated	5.9	2.9	8.8	103.5	(33.0)
Finished reformulated	0.0	0.0	na	na	na
Finished other	163.7	171.6	157.9	(4.6)	3.7
Blending components	36.6	36.2	35.3	1.1	3.7
Naphtha-jet	1.2	1.3[R]	3.8	(7.7)	(68.4)
Kerosine-jet	42.9	40.6	39.6	5.7	8.3
Distillate fuel oil	135.8	129.7	128.2	4.7	5.9
≤ 0.05 percent sulfur	65.9	66.4	44.5	(0.8)	48.1
> 0.05 percent sulfur	69.9	63.3	83.7	10.4	(16.5)
Residual fuel oil	39.1	37.9	44.5	3.2	(12.1)
All other oils	235.9	215.5[R]	230.8	9.5	2.2
Total all oils	1,080.1	1,057.6[R]	1,091.9	2.1	(1.1)

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. 2—Based on API estimated data converted to a monthly basis. 3—Source: U.S. Energy Information Administration (including any adjustments). 4—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). 5—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. 6—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. 7—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

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Monthly Statistical Report

Finance, Accounting, and Statistics Department

Vol. 18, No. 9
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SUMMARY

Total deliveries dropped 2.4 percent in September, their first year-to-year decline since March and the largest single-month decline in a year-and-a-half. The largest single factor contributing to the drop of 430 thousand B/D was a 365 thousand B/D, 31 percent decline for residual fuel oil, which a year ago had been enjoying a price advantage versus natural gas which has since evaporated. Total deliveries for the third quarter as a whole were only flat versus a year ago, again mainly due to a large decline for residual fuel oil.

Gasoline deliveries, as well, were weak in September, falling 1.7 percent despite little if any indication of a slowdown in underlying consumption. Distillate deliveries, however, rose 3.2 percent and kerosine jet fuel deliveries increased over 13 percent—mostly because of the military conversions from naphtha jet since the latter part of last year. Despite September's decline in total deliveries, year-to-date deliveries are still up 2.8 percent, more or less in line with estimated current growth in underlying consumption.

A 2.8 percent increase in Alaskan crude oil production held the decline in overall domestic output to 2.1 percent for September. But for the year to date, eroding lower 48 production, which fell 3.5 percent for September, has been the main cause of U.S. production's decline of 3.1 percent or about 215 thousand B/D.

As for imports, September's were down slightly from levels in July and August, which had been the highest monthly levels in seventeen years. But, at nearly 9.4 million B/D, they were still up 10.4 percent from a year ago and contributed to another substantial stock rise of 32 million barrels. This put the third quarter's stock build at 88 million barrels, the largest quarterly rise in fifteen years. The jump in inventories brought total stocks to 1.113 billion barrels, 25 million barrels above the recent-year average for September and the highest September level in eleven years.

The inventory increase took place in both crude and products, with crude stocks, which have typically declined from August to September in recent years, rising by 10 million barrels for the month. Inventories of both gasoline and distillate rose about 6 million barrels. Distillate stocks ended the month at 142 million barrels, about 10 million barrels above recent-year average—an average based on data from a period before the low-sulfur highway diesel regulations went into effect, which may have increased storage requirements.

Despite September's weak deliveries, input to distillation units at refineries rose 1.9 percent in September, slowing only slightly from August's 3.0 percent increase. Utilization of reported capacity reached 94.3 percent for the month, the highest for September since at least the mid-1970s. Gasoline output continued its pattern of year-to-year declines, falling 3.1 percent, though production of distillate and jet fuel continued to rise strongly.

PRODUCT SUPPLIED

Gasoline

DELIVERIES DROP DESPITE GROWTH IN TRAVEL.

Gasoline deliveries were unusually weak in September, their 1.7 percent decline from a year ago the largest for a single month in over a year and a half. September's drop, in fact, was large enough to pull gasoline deliveries for the quarter as a whole down to a level only about even with a year ago. However, with year-to-date deliveries through August up 1.4 percent, and with growth in highway travel apparently continuing, their is little to indicate that there has been significant softening in the underlying consumption of gasoline.

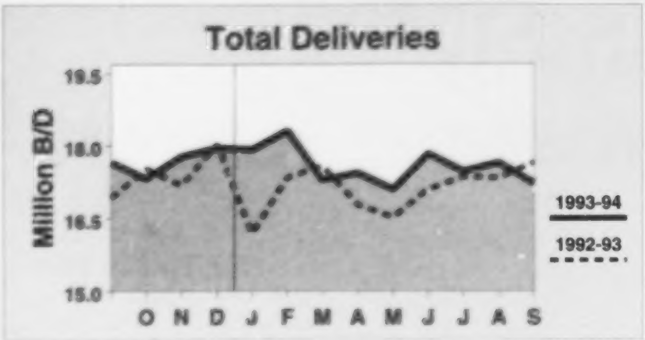
The latest data on travel, for July, showed a year-to-year increase of 2.1 percent, only a minor departure from the 2.5 percent average growth of recent months. If July's increase was a bit below that of prior months, it was more because of above-trend travel in the year-ago period than because of any weakness this year. Furthermore, the economy has apparently still been performing well versus a year ago, giving little reason to believe transportation demand has suddenly flattened out.

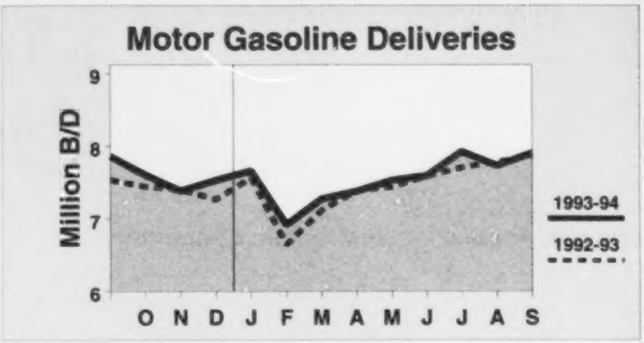
Meanwhile, regional data available through July show that the West Coast (PAD V) has had the strongest growth in gasoline deliveries so far this year. That still only amounted to a 2.5 per-

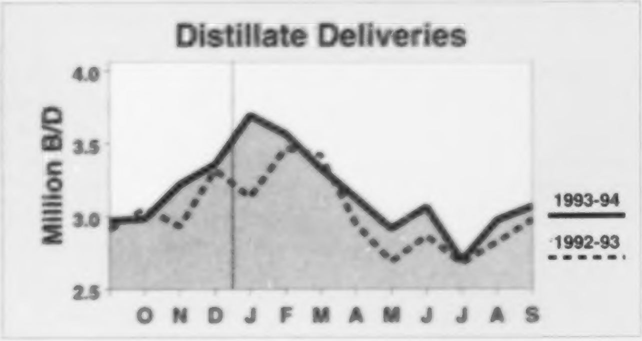
API ESTIMATES

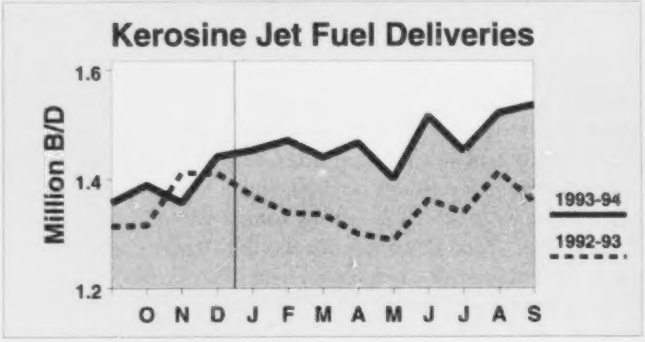
	SEPTEMBER		YEAR-TO-DATE	
	Million B/D	Percent Change	Million B/D	Percent Change
Total domestic deliveries	17.2	(2.4)	17.6	2.8
Crude production	6.6	(2.1)	6.6	(3.1)
Total imports	9.4	10.4	9.0	6.1
Stocks (million bbl)	1,113	3.1	na	na

Published October 19, 1994


Total Deliveries


Motor Gasoline Deliveries


Distillate Deliveries


Kerosine Jet Fuel Deliveries

cent increase in deliveries for the first seven months. The West Coast accounts for about 18 percent of U.S. gasoline deliveries. The East Coast (PAD I), which alone accounts for a third of gasoline deliveries, has experienced only about a 1 percent increase. Growth in deliveries for the rest of the U.S. averaged about the same as for the country as a whole, about 1.6 percent for the first seven months.

Distillate Fuel Oil

UP, BUT BY LESS THAN RECENT TREND.

Through August, distillate deliveries' growth had averaged a strong 5.7 percent—making September's 3.2 percent rise look a bit modest by comparison. The month's mild weather, though nationally accumulating about 30 percent fewer heating degree days (an indicator of heating demand) than last September, played only a minor role in moderating the month's deliveries increase.

First, in the largest heating oil consuming region, the East Coast, the difference versus last year was more moderate, with fewer extremes, hot or cold, than for last September. Second, being on the shoulder of the heating season, the negative impact on overall distillate consumption for the month we estimate was at most 20-30 thousand B/D. Although September's deliveries were a bit below trend, in view of continued year-to-year growth in indicators of economic activity, we estimate that consumption of distillate fuel oil, spurred in particular by diesel demand, continues at 4 to 5 percent.

Deliveries of high-sulfur distillate, which include deliveries to the home heating oil market, have so far shown only minimal signs of a seasonal rise as the heating season begins. Deliveries of high-sulfur distillate, which had averaged 1.8 million B/D over the peak of last winter's heating season, this September still amounted to only about 1.2 million B/D, not much above the 1.0-1.1 million B/D they have been averaging over the summer.

Regionally, signs are that the growth in distillate demand experienced so far this year has been relatively evenly spread across the nation. Growth for the first seven months of 1994 in the East and Midwest has averaged 6 percent, and on the West Coast have approached 7 percent. On the Gulf Coast, however, growth in deliveries has amounted to only about 3 percent.

Kerosine Jet Fuel

AIR CARGO GROWTH CONTRIBUTES TO COMMERCIAL DEMAND.

Buoyed by defense conversion, September deliveries of kerosine jet fuels continued to exceed those of the same month from the year before, despite the relatively static demand for fuel from air passenger carriers. Final deliveries were 13 percent greater in September than they had been during the same interval the year before, and were 1 or 2 percent higher than indicated by underlying economic trends. In the third quarter deliveries were roughly 10 percent higher than those in the third quarter 1993. Although jet kero deliveries have grown considerably since the year before, third quarter sales were only 130 thousand B/D higher in 1994 than they had been in 1993, somewhat less than the expected 150 thousand B/D increase in demand from defense conversion programs on the East and West Coast.

While defense conversion has resulted in higher deliveries, this is a one-time effect; in the long run, the underlying pattern of demand for kerosine jet fuel is determined largely by changes in commercial air traffic. Airline passenger travel, which accounts for more than 1 million B/D of final jet kero demand and is the largest segment of commercial jet kerosine demand, has not been responsible for the higher deliveries during the third quarter. Although the total number of passenger enplanements rose by more than 5 percent and the total number of revenue passenger miles rose by more than 4 percent from the third quarter of 1993, the airlines have not responded by making more passenger seats available. Instead, the airline industry as a whole has reduced the total number of available seat miles by about one-half percent. Coupled with ongoing efforts to increase fuel efficiency, these factors suggest that the commercial passenger component of the demand for jet fuel has diminished by an estimated 1 or 2 percent, compared with demand in the same period a year ago.

Although commercial demand for fuel for passenger flights has remained static, demand for jet kero for air cargo flights has increased rapidly. As a whole, we estimate that air cargo flights represent between 8 and 10 percent of the total commercial demand for jet kero, and account for approximately 100 thousand B/D of total deliveries. During the third quarter, the air cargo industry is estimated to have experienced a 13 percent increase in the total volume of cargo versus the third quarter in 1993. At the same time, total industry capacity, measured as the number of available flight cargo ton/kilometers supplied by the industry, has risen by 5 percent. Based on these facts, we estimate that the demand for jet fuel tied to air cargo flights is growing at a rate of 5-10 percent per year.

Residual Fuel Oil

DELIVERIES FALL TO A RECENT-YEAR LOW. Relatively mild weather and weak demand for air conditioning along the East Coast, accompanied by the continuation of exceptionally low prices for natural gas resulted in record low levels of residual oil deliveries during September. Resid deliveries in September were the lowest in any month in more than two decades. Compared to the deliveries of September 1993, deliveries were down by 31 percent; however, at least 50 percent of the nearly 365 thousand B/D decline between periods must be attributed to the unusually high level of deliveries of the year before, caused by strong cooling demand. The dramatic drop in deliveries accompanied a 70 percent reduction in cooling days in New England during September of 1994 compared with the previous September, along with a similar 45 percent reduction in the Mid-Atlantic states and a 23 percent reduction in the Southeast, all areas with strong resid use by utilities.

During the third quarter, total residual oil deliveries were down by nearly 15 percent compared to the third quarter the year before. Part of this is due to an unfavorable price differential. Since the beginning of July, the cost per BTU of residual oil has been greater than the cost per BTU of natural gas. By the end of September, resid prices were between 20 and 30 cents per million BTU higher than the price of natural gas. In addition, demand for electric air conditioning along the East Coast was between 12 and 18 percent less during the third quarter than it had been during the same interval in 1993, lessening utility reliance on resid to meet summer peaks. The combination of these two factors is responsible for making the average deliveries of residual fuel in the third quarter lower than any third quarter since at least 1970, despite the relatively high deliveries in August, which were around 90 thousand B/D greater than estimated demand.

Despite the record low third quarter demand for resid, average year-to-date deliveries are almost exactly the same for this year, compared with the year before. The low third quarter demand for resid is balanced by the high demands for resid from earlier in the year, prompted by the record cold temperatures and a more favorable price ratio with natural gas. Although 1994 year-to-date deliveries are very close to the deliveries over the same period in 1993, they are nearly 3 percent lower than the equivalent year-to-date deliveries in 1992.

Other Oils

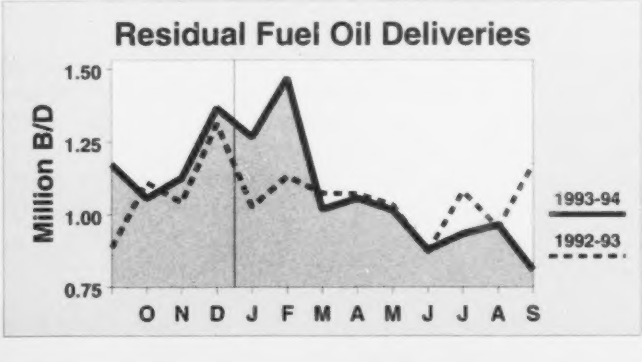
DOWN 2.8 PERCENT FOR SEPTEMBER. September's deliveries of "other oils", declining 2.8 percent, year to year, were a bit weak, given that from the beginning of the year through August, deliveries had managed an increase averaging 3.8 percent. Despite September's decline, we estimate that underlying demand for "other oils" is still positive and running around 4 percent or so.

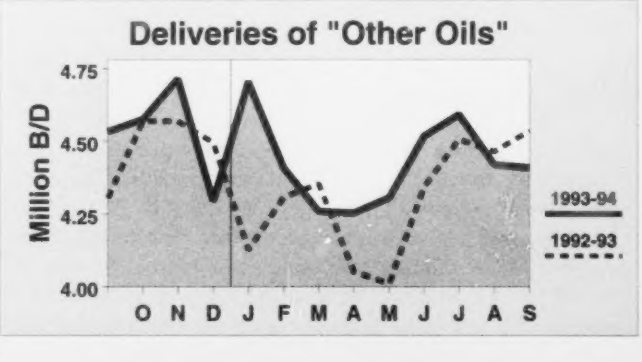
Even with September's decline, deliveries of "other oils" for the year to date have risen 3.1 percent, slightly ahead of the increase for total deliveries. Although "other oils" fell slightly behind total deliveries last year, over the longer term, the "other oils" category, which makes up fully a quarter of domestic petroleum deliveries, has tended to grow more (or decline less) than overall petroleum deliveries. Since 1990, year-to-date deliveries of "other oils" have grown an average of 1.8 percent per year, versus less than half that for total deliveries. The largest share of growth has been due to rising demand for petrochemical feedstocks, with demand for lubricants, asphalt, and other products relatively flat versus the same period four years ago.

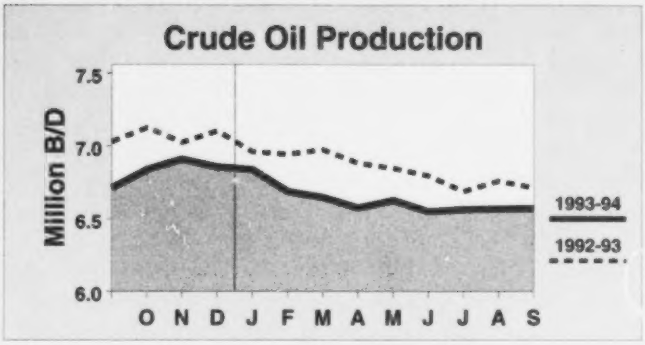
SUPPLY

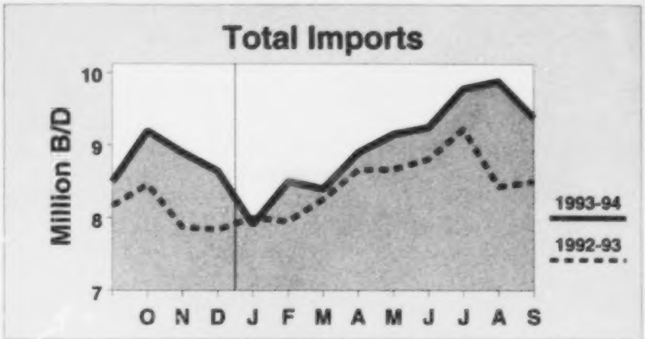
Production

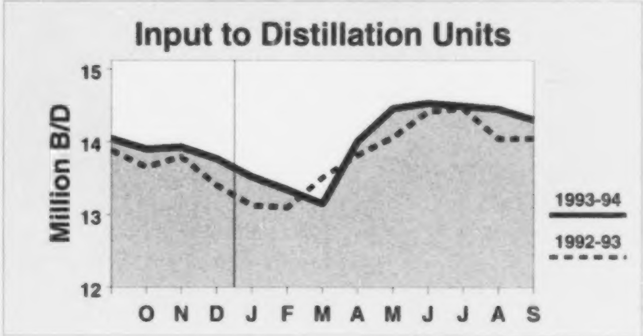
ALASKA HELPS SLOW CRUDE OIL'S DECLINE. Increases in Alaskan crude oil production in recent months were partially responsible in reducing the period-to-period annual decline from 3.6 percent in the first half of 1994 to 2.2 percent in the third quarter. During the third quarter, production in the lower 48 states was down by more

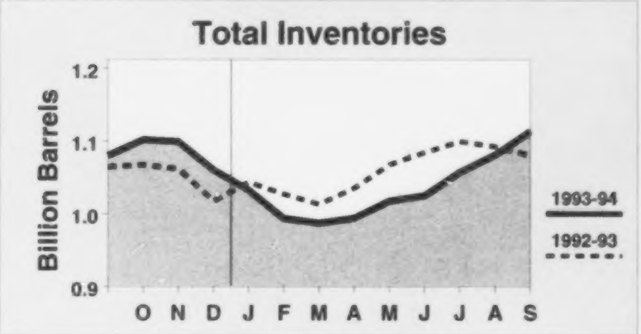





Crude Oil Production


Total Imports


Input to Distillation Units


Total Inventories

than 3 percent, while at the same time, Alaskan output was nearly 1 percent higher than it had been during the same interval in 1993. In the most recent month, production in the lower 48 states fell by more than 180 thousand B/D from its level in September, 1993, while production in Alaska rose by more than 40 thousand B/D.

The increase in Alaskan production during the third quarter is the result of the implementation of GHX-2, an advanced oil recovery system. During the third quarter of 1993, total production from the North Slope was relatively low, due to temporary production reductions required by the first phase of the GHX-2 program. With the completion of the second phase at the end of September, it is estimated that the project raised Alaskan production capacity by 100 thousand B/D and has increased recoverable reserves by 375 to 400 million barrels.

Imports

HIGH IMPORTS BOOST DOMESTIC INVENTORIES. At nearly 9.4 million B/D, total imports in September were up 10.4 percent from a year ago but were down from the even higher levels of July and August. Even so, as evidenced by the month's unusually large stock build, we estimate that this was still 400 thousand B/D or so above underlying needs. Imports in recent months have been at their highest levels in more than seventeen years, boosted by substantial inventory building during the third quarter. Of the average 9.7 million B/D imported over the past three months, roughly 700 thousand B/D has gone into inventory building above the seasonal norm.

During the third quarter, the major growth component in imports shifted away from products towards crude oil. During the first half of 1994, most of the roughly 300 thousand B/D, year-to-year increase in imports had been in the form of petroleum products. But for the third quarter, imports rose nearly 970 thousand B/D, of which more than 860 thousand B/D was in the form of crude oil. For September, product imports were actually down 6.7 percent to 1.8 million B/D, while crude oil imports rose more than 15 percent to 7.6 million B/D.

Imports of finished gasoline fell from strong levels of around half a million B/D in July and August to about 350 in September—but were still up over 80 thousand B/D from a year ago. Distillate imports rose 43 thousand B/D from weak levels a year ago to 180 thousand B/D, while imports of kerosine jet fuel rose 25 thousand B/D to a relatively strong 113 thousand B/D. Meanwhile, weak resid demand contributed to a drop in residual fuel oil imports to a new, recent-year low of 187 thousand B/D, less than half the 430 thousand B/D imported a year earlier.

Refinery Operations

UTILIZATION FOR SEPTEMBER RISES 1.9 PERCENT. Despite September's weak deliveries, input to distillation units at refineries rose 1.9 percent in September, slowing only slightly from August's 3.0 percent increase. Utilization of reported capacity reached 94.3 percent for the month, surpassing the recent-year high for September reached a year ago of 92.8 percent. For the year to date, refinery utilization has averaged 92.7 percent, up over a point from the same period a year ago and the highest for a similar period since at least the mid-1970s.

Gasoline output rose slightly from August's level to 7.34 million B/D in September. Versus one year earlier, however, it nevertheless continued its pattern of declines, falling 3.1 percent. Distillate production rose 4.1 percent, despite the decline in deliveries for the month. Output of kerosine jet fuel jumped over 16 percent from weak levels a year ago, while residual fuel oil production dropped 2.7 percent from stronger-than-usual levels last September.

Inventories

THIRD QUARTER SEES LARGEST BUILD IN FIFTEEN YEARS.

Total stocks continued to rise substantially in September, as they have over the past three months as a whole. With September's 32 million barrels increase, the total rise for the quarter as a whole reached 88 million barrels, the largest quarterly build in fifteen years. The jump in inventories brought total stocks to 1.113 billion barrels, 25 million barrels above the recent-year average for September and the highest September level in eleven years.

Crude stocks, which have typically declined from August to September in recent years, instead rose by 10 million barrels for the month. This put crude oil inventories at 332 million barrels, close to the average monthly level for the first time since the beginning of this year.

Product stocks also contributed to the rise in total stocks. Gasoline stocks rose 6 million barrels to 212 million barrels, still about 5 million barrels below average for September but well within the observed range for September of recent years. For distillates, inventories rose a normal 6 million barrels to 142 million barrels, about 10 million barrels above recent-year average—an average based on data from a period before the low-sulfur highway diesel regulations went into effect, which may have increased storage requirements.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]

(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	September			Year-to-Date		
	1994[2]	1993[3]	% Change	1994[4]	1993[3]	% Change
Disposition:						
Total motor gasoline	7,477	7,607	(1.7)	7,540	7,460	1.1
Finished oxygenated	962	1,451^E	(33.7)	1,211	1,262^E	(4.0)
Finished reformulated	0	na	na	0	na	na
Finished other	6,515	6,156^E	5.8	6,329	6,198^E	2.1
Naphtha-jet	63	140	(55.0)	60	123	(51.2)
Kerosine-jet	1,536	1,357	13.2	1,473	1,344	9.6
Distillate fuel oil	3,067	2,973	3.2	3,154	2,993	5.4
≤ 0.05 percent sulfur	1,896	1,384^E	37.0	1,775	474^E	274.5
> 0.05 percent sulfur	1,171	1,589^E	(26.3)	1,379	2,519^E	(45.3)
Residual fuel oil	809	1,173	(31.0)	1,043	1,045	(0.2)
All other oils (including crude losses)	4,408	4,534	(2.8)	4,430	4,299	3.1
Reclassified[5]	-140	-134	na	-128	-178	na
Total domestic products supplied	17,220	17,650	(2.4)	17,572	17,086	2.8
Exports	905	902	0.3	899	991	(9.3)
Total disposition	18,125	18,552	(2.3)	18.471	18,077	2.2
Supply:						
Domestic liquids production:						
Crude oil (including condensate)	6,570	6,712	(2.1)	6,625	6,839	(3.1)
Natural gas liquids	1,740	1,732	0.5	1,700	1,757	(3.2)
Other supply[6]	1,501	1,206	24.5	1,317	1,208	9.0
Total domestic supply	9,811	9,650	1.7	9,642	9,804	(1.7)
Imports:						
Crude oil (excluding SPR imports)	7,564	6,547	15.5	7,008	6,694	4.7
From Canada	966	1,023	(5.6)	953	876	8.8
All other	6,598	5,524	19.4	6,055	5,818	4.1
Products	1,819	1,950	(6.7)	2,013	1,808	11.3
Residual fuel oil	187	430	(56.5)	337	359	(6.1)
All other	1,632	1,520	7.4	1,676	1,449	15.7
Total imports	9,383	8,497	10.4	9,021	8,502	6.1
Total supply	19,194	18,147	5.8	18,663	18,306	2.0
Stock change, all oils	1,069	-405	na	192	229	na
Refinery Operations:						
Input to crude distillation units	14,305	14,045	1.9	14,035	13,846	1.4
Operable capacity	15,175	15,142	0.2	15,134	15,147	(0.1)
Refinery utilization[7]	94.3	92.8	na	92.7	91.4	na
Crude oil runs	14,135	13,841	2.1	13,860	13,596	1.9

	September 1994	August 1994	September 1993	% Change From	
				Month Ago	Year ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding SPR stocks)	331.9	321.8	320.7	3.1	3.5
Unfinished oils	94.4	97.2	102.7	(2.9)	(8.1)
Total motor gasoline	212.0	206.2	208.4	2.8	1.7
Finished oxygenated	18.3	5.9	23.4	210.2	(21.8)
Finished reformulated	0.0	0.0	na	na	na
Finished other	155.4	163.7	147.8	(5.1)	5.1
Blending components	38.3	36.6	37.2	4.6	3.0
Naphtha-jet	1.2	1.2	3.0	0.0	(60.0)
Kerosine-jet	43.3	42.9	38.4	0.9	12.8
Distillate fuel oil	142.3	135.8	131.3	4.8	8.4
≤ 0.05 percent sulfur	67.7	65.9	47.7	2.7	41.9
> 0.05 percent sulfur	74.6	69.9	83.6	6.7	(10.8)
Residual fuel oil	41.0	39.1	43.6	4.9	(6.0)
All other oils	246.9	236.8^R	231.6	4.3	6.6
Total all oils	1,113.0	1,081.0^R	1,079.7	3.0	3.1

1—Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions. **2**—Based on API estimated data converted to a monthly basis. **3**—Source: U.S. Energy Information Administration (including any adjustments). **4**—Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments). **5**—An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders. **6**—Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol. **7**—Represents "Input to crude oil distillation units" as a percent of "Operable capacity". **R**—Revised. **E**—Estimated. **na**-Not available.

ESTIMATED UNITED STATES PETROLEUM BALANCE[1]
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	3rd Quarter 1994[3]	 1993[2]	 % Change
Disposition:			
Total motor gasoline	7,746	7,754	(0.1)
Finished oxygenated	813	1,006[E]	(19.2)
Finished reformulated	0	na	na
Finished other	6,933	6,748[E]	2.7
Naphtha-jet	60	123	(51.2)
Kerosine-jet	1,503	1,369	9.8
Distillate fuel oil	2,909	2,821	3.1
≤ 0.05 percent sulfur	1,859	715[E]	160.0
> 0.05 percent sulfur	1,050	2,106[E]	(50.1)
Residual fuel oil	903	1,068	(15.5)
All other oils (including crude losses)	4,473	4,500	(0.6)
Reclassified[4]	-145	-191	na
Total domestic products supplied	17,449	17,444	0.0
Exports	892	911	(2.1)
Total disposition	18,341	18,355	(0.1)
Supply:			
Domestic liquids production:			
Crude oil (including condensate)	6,568	6,719	(2.3)
Natural gas liquids	1,742	1,740	0.1
Other supply[5]	1,293	1,132	14.2
Total domestic supply	9,603	9,591	0.1
Imports:			
Crude oil (excluding SPR imports)	7,691	6,829	12.6
From Canada	962	993	(3.1)
All other	6,729	5,836	15.3
Products	1,993	1,889	5.5
Residual fuel oil	241	384	(37.2)
All other	1,752	1,505	16.4
Total imports	9,684	8,718	11.1
Total supply	19,287	18,309	5.3
Stock change, all oils	946	-46	na
Refinery Operations:			
Input to crude distillation units	14,418	14,182	1.7
Operable capacity	15,173	15,160	0.1
Refinery utilization[6]	95.0	93.5	na
Crude oil runs	14,286	13,941	2.5

	3rd Quarter 1994[3]	 1993[2]	 % Change
Stocks (at quarter-end, in millions of barrels):			
Crude oil (excluding SPR stocks)	331.9	320.7	3.5
Unfinished oils	94.4	102.7	(8.1)
Total motor gasoline	212.0	208.4	1.7
Finished oxygenated	18.3	23.4	(21.8)
Finished reformulated	0.0	na	na
Finished other	155.4	147.8	5.1
Blending components	38.3	37.2	3.0
Naphtha-jet	1.2	3.0	(60.0)
Kerosine-jet	43.3	38.4	12.8
Distillate fuel oil	142.3	131.3	8.4
≤ 0.05 percent sulfur	67.7	47.7	41.9
> 0.05 percent sulfur	74.6	83.6	(10.8)
Residual fuel oil	41.0	43.6	(6.0)
All other oils	246.9	231.6	6.6
Total all oils	1,113.0	1,079.7	3.1

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